# Infor LN Warehousing User Guide for the Outbound and Shipment Goods Flows

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# About this document

This guide describes the setup and use of the outbound and shipment procedures.

### Intended Audience

This book is intended for those who want to learn how to use outbound, inspections and shipments and to set up the delivery note functionality in the way that best serves their purposes. Both end users and users on administrator level will find the information they require.

### Assumed Knowledge

Familiarity with the business processes involved in handling outbound goods in the warehouse, and general knowledge of the LN functionality will help you understand this book. In addition, Warehousing training courses are available to give you a head start.

### References

Use this guide as the primary reference for the outbound and shipment goods flows. Use the current editions of these documents for information that is not covered in this guide:

- *User Guide for Warehousing Procedures*
- *User Guide for Warehousing Orders*
- *User Guide for Warehouses*
- *User Guide for Handling Units (U8938 US)*
- *User Guide for the Inbound Goods Flow (U9788 US)*
- *User Guide for Warehousing Inspections (U9875 US)*
- *User Guide for Warehousing Quarantine Handling (U9876 US)*
- *User Guide for Delivery Notes and Shipments (U8982 US)*

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This document is assembled from online Help topics.

Text in italics followed by a page number represents a hyperlink to another section in this document.

Underlined terms indicate a link to a glossary definition. If you view this document online, clicking the underlined term takes you to the glossary definition at the end of this document.

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# Chapter 1
# Introduction

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## The outbound goods flow

The outbound process is used to issue goods from the warehouse. To issue and ship goods from a warehouse, warehouse processing is either based on handling units or outbound shipments and warehousing outbound order lines. If you use handling units to process goods, the order lines and/or shipments related to the handling units are updated in the background. Both outbound order lines and handling units are processed according to user-defined warehousing procedures.

For more information about:

- Warehousing procedures, see *LN Warehousing User Guide for Warehousing Procedures*
- Handling units, see *LN Warehousing User Guide for Handling Units (U8938)*.

### Inspection and quarantine handling

In LN, you can add warehousing inspection and quarantine handling functionality to both the inbound and outbound goods flows. Although briefly referred to in this guide, for more information please refer to *LN Warehousing User Guide for Warehousing Inspections (U9875)* and *User Guide for Quarantine Handling (U9876)*.

# Chapter 2
# Setup

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## To define warehousing order types

Warehousing order types determine how warehousing orders are handled. Warehousing order types are classified by inventory transaction type. The inventory transaction type that you add to a warehousing order type determines the type of warehousing procedure that you can link to the warehousing order type. The activities that must be carried out in order to handle warehousing orders are, by default, determined by the warehousing procedures that are linked to the warehousing order types.

Warehousing order types are linked to warehousing orders when warehousing orders are generated from other packages or when you manually create a warehousing order in the Warehousing Orders (whinh2100m000) session.

### Define warehousing order types

In the Warehousing Order Types (whinh0110m000) session, you can specify warehousing order types for the following inventory-transaction types:

- **Receipt**
  Use a warehousing order type of inventory transaction type **Receipt** to receive goods in a warehouse. You can link a **Receipt Procedure** and, optionally, an **Inspection Procedure** to a warehousing order type of inventory transaction type **Receipt**.
- **Issue**
  Use a warehousing order type of inventory transaction type **Issue** to issue goods from a warehouse. You can link a **Outbound Procedure** and a **Shipment Procedure** to a warehousing order type of inventory transaction type **Issue** **Note**: LN allows you to modify the outbound order line data based on the value the **Allow Updating Outbound Order Lines upto and including** field is set to in the Warehousing Order Types (whinh0110m000) session.
- **Transfer**
  Use a warehousing order type of inventory transaction type **Transfer** to transfer goods between warehouses, locations, business partners, projects, or work centers.

You must link these procedures to a warehousing order type of inventory transaction type **Transfer**:

- **Receipt Procedure**
- **Inspection Procedure**
- **Outbound Procedure**
- **Shipment Procedure**

A transfer involves either one or two warehouses. If items are transferred between two different warehouses, all activities of the warehousing procedures must be carried out. However, if a transfer takes place between two locations within the same warehouse, the receipt activities are not carried out. You can use transfer orders to define a replenishment system within a single warehouse. This system controls replenishment from bulk locations to pick locations.
**Note**: LN allows you to modify the outbound order line data based on the value the **Allow Updating Outbound Order Lines upto and including** field is set to in the Warehousing Order Types (whinh0110m000) session.

- Inspections in LN Quality are possible for warehouse orders having order origin **Transfer (Manual)** only if the QM Implemented parameter is selected for the order type **Warehouse Transfer** in the Quality Management Parameters (qmptc0100m000) session.
- **WIP Transfer**
  Use a warehousing order type of inventory transaction type **WIP Transfer** to transfer work from one costing work center to another.

# Warehousing procedures

To model the inbound, storage, and outbound goods flows in your warehouse, you can define warehousing procedures in LN.

The following warehousing procedure types are available:

- **Receipt Procedure**
  This procedure controls the receipts of goods
- **Inspection Procedure**
  The inspection procedure controls the inspection of goods received at the warehouse.
- **Outbound Procedure**
  The outbound procedure controls the issue of goods. This procedure can include outbound inspections.
- **Shipment Procedure**
  The shipment procedure controls staging and shipping of goods.

A warehousing procedure includes various steps called activities that control the way warehousing orders and/or handling units are processed. An activity is performed using a particular LN session.

## Link warehousing procedures to inbound and outbound goods

Initially, you define a warehousing procedure and link this procedure to a particular warehousing order type. As a result, the warehousing procedure is the default procedure for the warehousing orders to which the order type is allocated, and the goods are processed according to the procedure of the order on which the goods are listed.

If you use handling units to process goods into and/or out of the warehouse, the goods are processed according to the warehousing procedure of the warehousing orders that list the goods contained in the handling units.

You can adjust the default procedure for individual warehousing orders and warehousing order lines of this warehousing order type. If you adjust the default procedure for an individual warehousing order of this order type, the adjusted procedure applies to the inbound and/or outbound order lines of the warehousing order. You can also adjust the warehousing procedure for an individual inbound or outbound order line.

## Automatic or manual execution of activities

You can specify whether an activity of a warehousing procedure must be carried out manually or automatically. Manually means that the user must perform the activity using the session related to the activity. Automatic means that the activity is carried out automatically after the preceding activity is finished. If the first activity is automatic for warehousing orders generated from orders originating from other packages, this activity is carried out the moment the warehousing order is generated.

However, to trigger warehouse processing for warehousing orders whose first activity is set to automatic processing and that are manually created or generated from Project, you must click Process.

The Process command is available in the following sessions:

- Warehousing Orders (whinh2100m000)
- Warehousing Order (whinh2100m100)
- Warehouse Manager Dashboard (whinh2300m000)
- Warehousing Assembly Orders (whinh2101m000)
- Inbound Order Lines (whinh2110m000)
- Outbound Order Lines (whinh2120m000)

# Order origins and options for canceling or updating outbound order lines

On the **Outbound Process** tab of the Warehousing Order Types (whinh0110m000) session, these options are available:

- **Allow Updating Outbound Order Lines upto and including**
- **Allow Canceling Outbound Order Lines upto and including**

- **Remove Canceled Outbound Order Lines upto and including**

The impact of these options is not the same for each order origin.

Updating outbound order lines is not allowed after outbound advice is generated for warehousing orders of these origins:

- **Service**
- **Maintenance Sales**
- **Maintenance Work**

Cancelling outbound order lines or removing cancelled outbound order lines is controlled by these options if the originating Service object is a:

- Work order material line that is cancelled
- Supplier claim delivery line that is terminated
- Customer claim delivery line that is terminated

For Order Management, these options only apply to the **Sales** and **Sales Schedule** origins.

For warehousing orders of origin Job Shop Control, updating the planned dates and quantities of outbound order lines is controlled by the **Correct Outbound Quantity for JSC upto and including** and **Correct Outbound Quantity for JSC upto and including** in the Inventory Handling Parameters (whinh0100m000) sessions.

The options in the Warehousing Order Types (whinh0110m000) session do not apply to warehousing orders originating from Manufacturing.

**Note**

For various order origins, the input fields of the originating order that affect the outbound order lines are still available after the status has been reached that updates are no longer allowed according to the **Allow Updating Outbound Order Lines upto and including** option.

If in such cases data is specified in these fields, a message is displayed to the effect that the input is not allowed according to the setting of this option, and the input is blocked.

# Update, cancel or remove outbound order lines

Updating or cancelling outbound order lines can affect the related outbound advices, outbound advice lines, or shipments and shipment lines.

This depends on the nature of the update and the stage of the outbound process that updating or cancelling is allowed. This stage is specified using these options in the Warehousing Order Types (whinh0110m000) session:

- **Allow Updating Outbound Order Lines upto and including**
- **Allow Canceling Outbound Order Lines upto and including**
- **Remove Canceled Outbound Order Lines up to and including**

## Update outbound order lines

If updating outbound order lines is allowed and outbound advice is generated, LN deletes the outbound advice if any of these fields are updated in the related outbound order lines:

- **Warehouse**
- **Item**
- **Serial Number**
- **Serial Status**
- **Lot Selection**
- **Lot**
- **Effectivity Unit**
- **E-item Revision**
- **Unit Binding**
- **Hard Stop on Quantity**
- **Inventory Handling**
- **Package Definition**
- **Payment**
- **Internal Payment**
- **Ownership**
- **Issue Strategy**
- **Issue from Business Partner**
- **From Project**
- **From Element**
- **From Activity**
- **From Extension**
- **From Cost Component**
- The contents of the **Specification** fields.

If outbound advice is released and picking lists are generated, LN deletes the outbound advice and the picking lists if any of the fields of the previous list are updated.

If **Generate Picking List** is specified in the **Allow Updating Outbound Order Lines upto and including** option but picking lists are not used in the warehousing procedure, shipments and shipment lines have been generated already, therefore updating the outbound order lines is not allowed. However, you can set the quantities of these shipment lines to **Not Shipped**.

## Cancel outbound order lines

If outbound order lines are cancelled and outbound advice is generated, LN deletes the outbound advice.

If outbound advice is released and picking lists are generated, LN deletes the outbound advice and the picking list when the outbound order lines are cancelled. If picking lists are not used in the applicable warehousing procedure, shipments and shipment lines are generated when the outbound advice is released. The quantities of these shipment lines is set to 0 (zero) when the order lines are cancelled and the status of the shipment lines is **Frozen** or **Confirmed**.

## **Projected** shipments

If projected shipments are present and any of these fields of the outbound order line are changed, new projected shipments are generated:

- **Warehouse**
- **Item**
- **Inventory Handling**
- **Package Definition**
- **Order Set**
- **Reference**
- **Ordered Quantity**
- **Order Unit**
- **Ship-to Address**
- **Extra Intrastat Info**
- **Shipment Reference**
- **Customer Order**
- **Acceptance Point**
- **Intermediate Consignee**
- **Delivery Point**

# Planned status for warehousing orders and order lines

For each warehousing order type, you can determine whether the initial status of the warehousing orders and inbound and/or outbound order lines must be **Planned** or **Open**. In some cases, however, the originating order determines the initial status of a warehousing order.

### Initial status of warehousing orders determined by origin

For warehousing orders originating from the following packages, the originating package determines whether the initial status is **Planned** or **Open**:

- **Service**
- **Maintenance Sales**
- **Maintenance Work**
- **JSC Production**
- **Production Schedule**
- **ASC Production**
- **Production KANBAN**

The **Planned** status is meant for order data entry, you cannot process planned warehousing orders. To make a planned warehousing order available for order processing, you must activate the warehousing order. An activated warehousing order obtains the **Open** status. If Warehousing is integrated with a Warehouse Management System, activated warehousing orders are automatically uploaded to the WMS system for processing.

For a newly created warehousing order line with the **Planned** status, you can:

- Define advance shipment notices
- Create freight orders
- Create cross-dock orders
- Generate handling units
- Specify Inventory commitment

In addition, for planned warehousing orders, LN:

- Generates planned inventory transactions
- Checks whether planned order lines are blocked or marked as rush orders.
- Creates history records

### Setting parameters for the Planned status

In the Warehousing Order Types (whinh0110m000) session:

- To specify that new inbound order lines obtain the **Planned** status, select the **Generate Planned Inbound Order Lines** check box.
- To specify that new outbound order lines obtain the **Planned** status, select the **Generate Planned Outbound Order Lines** check box.

New inbound or outbound order lines are either generated from other packages or created manually.

### How to activate Planned warehousing orders

To activate warehousing orders with the **Planned** status, you can use the Activate Warehousing Orders (whinh2203m000) session to activate a range of warehousing orders, or you can select individual orders and click **Activate**. The **Activate** option is available in the following sessions:

- Warehousing Orders (whinh2100m000)
- Warehousing Order (whinh2100m100)
- Warehouse Manager Dashboard (whinh2300m000)

In the Activate Warehousing Orders (whinh2203m000) session, you can also deactivate manually created warehousing orders.

Note that after you have activated a planned warehousing order for which the first activity is set to **Automatic**, you must use the Process button to trigger automatic processing or manually perform the first activity. For more information, refer to Inbound and outbound procedures.

# Chapter 3
# Outbound

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## The outbound procedure

The outbound procedure comprises the activities that you must perform in LN to issue goods from the warehouse and prepare these goods for shipment or transfer. The outbound procedure can include outbound inspections, if required.

This topic describes all steps, also called activities, of the outbound procedure and shows how you can perform these steps.

If a step is mandatory, this is indicated in the step description. You are not required to include non-mandatory activities in your warehousing procedures. In addition, you can specify whether an activity must be performed manually or automatically. For information on how to define warehousing procedures, see *Warehousing procedures (p. 16)*.

After the outbound advice is generated for the outbound order line, LN allows you to modify the outbound advice. If the **Full Packages Only** functionality is implemented and the modified advised quantity is not in multiples of full packages, LN displays a warning message. During the confirmation of shipments, you can modify the advised quantity to multiples of full packages.

The outbound procedure includes these steps:

### Step 1: Generate outbound advice

The **Outbound Advice** activity is a mandatory step of the outbound procedure.

The first step of the outbound procedure is to generate outbound advice for the goods that you want to issue from the warehouse. You can generate outbound advice as soon as outbound order lines have been created for the goods that you want to issue. If the warehouse has no locations, the outbound advice does not list locations, but only lists the quantities to be issued.

To generate outbound advice, in the Generate Outbound Advice (whinh4201m000) session, select the order lines that list the goods that you want to issue and click **Advise**. Alternatively, you can generate outbound advice for individual outbound order lines in the Outbound Order Lines (whinh2120m000) session or the Outbound Line Status Overview (whinh2129m000) session.

The initial status of an outbound order line is either **Planned** or **Open**, which is determined by parameter settings. If the initial status is **Planned**, the order line must be activated to obtain the **Open** status before

you can generate outbound advice. For more information, refer to *Planned status for warehousing orders and order lines (p. 20)*. After the outbound advice is generated, the status of the outbound order lines that list the goods selected for the outbound advice changes to **Advised**. For more information, refer to *Outbound advice (p. 26)*.

## Step 2: Release outbound advice

The **Release Outbound Advice** activity is a mandatory step of the outbound procedure.

After the outbound advice is generated, you must release the outbound advice for these reasons:

- To enable picking lists to be generated, if picking lists are included in the warehousing procedure of the outbound order lines related to the outbound advice.
- To indicate that the goods are ready for shipment, if the warehousing procedure includes no picking lists.
- To indicate that the goods are ready for inspection, if the warehousing procedure includes inspections.

After the outbound advice is released, the related outbound order lines and handling units obtain these statuses:

- **Released**
  If picking lists are included in the outbound warehousing procedure of the outbound order lines. For further information on picking lists, see the following step, Generate picking list.
- **Staged**
  If picking lists are not included in the outbound warehousing procedure of the outbound order lines. This status implies that the goods have been moved to the loading area of the warehouse and are about to be shipped. For **Staged** order lines, LN creates shipment lines. You can perform *The shipment procedure (p. 63)* for these lines.
- **To be Inspected**
  If outbound inspections are included in the outbound warehousing procedure of the outbound order lines and the items requires outbound inspections. For further information on outbound inspections, see step Inspect outbound goods.

To release outbound advice, in the Release Outbound Advice (whinh4202m000) session, select the order lines that list the goods that you want to release and click **Release Advice**. Alternatively, you can release outbound advice for individual order lines in the Outbound Order Lines (whinh2120m000) session or the Outbound Line Status Overview (whinh2129m000) session.

## Step 3: Generate picking list

A picking list is a document that shows the locations from which you must collect the goods that you want to issue. A picking list shows the preferred order in which to pick the goods from the warehouse. You can generate picking lists after the outbound advice is released. The picking list activity is not mandatory and is only available for location-controlled warehouses. After you generate a picking list for an outbound order line, the status of the order line remains **Released**.

You can generate picking lists in the Generate Picking List (whinh4415m000) session.

### Step 4: Adjust picking list

Optionally, you can change the picking list, if you want to pick other goods than those originally advised, or you can change the locations. Thus, you can change lot numbers, serial numbers, item quantities, and/or locations.

### Step 5: Confirm picking list

To confirm that the goods on the picking list are picked, in the Picking List (whinh4525m100) session, select the **Pick Run** option, the **Pick Mission** option, or the **Pick Advice** option from the appropriate menu. The status of the related outbound order lines changes to **Staged**. This status implies that the goods have been moved to the loading area of the warehouse and are about to be shipped. For **Staged** order lines, LN creates shipment lines. You can perform *the shipment procedure (p. 63)* for these lines. If outbound inspections are included in the warehousing procedure, however, the status changes to **To be Inspected**.

### Step 6: Inspect outbound goods

Unlike inbound inspections, the outbound inspection is not a warehousing procedure in its own right, but an activity that you can add to the outbound procedure. You can add the outbound inspection step to a warehousing procedure if the setup for the warehouse, supplier, or item requires item inspection.

If the inspection activity is included in the warehousing procedure, LN creates an inspection record in the Warehouse Inspections Overview (whinh3122m000) session after the outbound advice is released or the picking list is confirmed as described in the previous steps, and the status of the related outbound order lines changes to **To be Inspected**.

You can then approve, reject, or scrap and process the items in the Warehouse Inspections Overview (whinh3122m000) session or the Warehouse Inspection (whinh3622m000) session.

Outbound order lines related to approved and processed items obtain the **Staged** status. This status implies that the goods have been moved to the loading area of the warehouse and are about to be shipped. For **Staged** order lines, ERP LN 6.1 creates shipment lines. You can perform *the shipment procedure (p. 63)* for these lines. Rejected and processed item quantities are removed from inventory or sent to the quarantine warehouse or quarantine location without using the outbound procedure. The rejected quantities are updated on the outbound order lines.

# Outbound order lines

Outbound order lines deal with activities that relate to the issue of goods from a warehouse and the preparation of these goods for shipment.

## Outbound-order line characteristics

You can link an outbound order line to a warehousing order with one of the following inventory-transaction types:

- **Issue**
- **Transfer**
- **WIP Transfer**

An outbound order line is generated either automatically by another package or module, or created manually in Warehousing. The order type determines the default warehousing procedure steps that must or can be taken to process the order lines. You can adjust the default warehousing procedure for an individual order header. As a result, the adjusted procedure applies to the order lines that belong to the order header. In addition, you can adjust the procedure for an individual order line.

# Outbound advice

Outbound advice comprise instructions to move items to be issued out of the warehouse. Therefore, an individual line of an outbound advice might read as follows: Take 10 of item A from location Pick3 and put them in location Staging 5.

## Generate outbound advice

Outbound movement of goods is initiated and controlled by a warehousing order of one of the following inventory-transaction types:

- **Issue**
- **Transfer**
- **WIP Transfer**

Outbound movement of goods can also be triggered by a warehousing assembly order.

These warehousing orders can be generated automatically by other packages or modules in LN, or manually created in Warehousing.

A warehousing order has one or more outbound order lines. You can generate outbound advice for an outbound order line in the Generate Outbound Advice (whinh4201m000) session. This advice shows where the goods must be taken from and where they must go. You can group several outbound advice lines to be run at the same time. You can view the outbound advice in the Outbound Advice (whinh4525m000) session.

## Release outbound advice

You can release outbound advice in the Release Outbound Advice (whinh4202m000) session. After the advice is released, you can put the advice on a picking list by generating the picking list for a run. On

the picking list, the outbound advice lines are grouped by run and picking mission. You can confirm an individual advice line, picking mission, or an entire run.

## Approve/reject picked inventory

After you (partially) confirm the picking list, you can approve or reject the picked inventory. For the approved advice lines, LN creates shipment lines, which you can confirm.

**Note**

The only mandatory activities for outbound warehousing procedures are to generate outbound advice lines and to release outbound advice lines. The other activities, generating picking lists and inspections, are optional. It depends on the warehousing procedure defined for the outbound orders whether LN automatically carries out these activities or the user must perform the activities. For further information, see Automatic or manual execution of activities.

For each procedural step, you can undo the previous procedure step: for example, undo the advice, the release, or undo the generation of the picking list. However, you cannot undo the confirm picking and approval activities.

# To generate picking lists

To generate a picking list from the Handling Units (whwmd5130m000) session, proceed as follows:

1. On the appropriate menu, select the **Execute Inbound** sub-menu.
2. From the **Execute Inbound** sub-menu, click **Generate Picking List**. As a result, the Generate Picking List (whinh4415m000) session opens.
3. In the Generate Picking List (whinh4415m000) session, select the required options and settings and click **Generate**. As a result, the picking list is generated. The status of the handling unit remains **Released**.

# How changes in component lines affect outbound order lines and shipment lines

If outbound advice does not yet exist, LN automatically updates warehousing outbound order lines with changes in sales order lines or component lines. These changes include:

- Item quantity changes
- BOM structure changes:
  - New sales order line and component line if new subkit is added to BOM, which results in new warehousing order sets and outbound order lines

- New component lines if components are added to subkits of BOM, which results in new outbound order lines
- Cancellation of component or sales order lines, which results in the automatic removal of the corresponding outbound order lines

If outbound advice or picking lists exist, a component line can be:

- Changed or deleted after manually removing the relevant outbound advice or picking lists.
- Cancelled, LN then automatically removes the outbound advice or picking lists.

If shipment lines exist, to cancel, delete, or change a component line, for the shipment lines:

1. Set the shipped quantity to 0.
2. Confirm.
3. Use the Inventory Movement (whinr1250m000) session or the Inventory Movement (Range) (whinr1252m000) session to transfer the unshhipped goods from the staging location back to the storage location.

# Chapter 4
# Customer Owned Lot or Serialized Inventory

4

## Outbound advice for customer owned low volume lot-controlled or serialized inventory

To create outbound advice for project pegged customer owned inventory that is low volume serialized or low volume lot controlled, the lot or serial numbers of the inventory must match those of the outbound order lines. If the order that initiated the outbound advice is related to the receipt order of the inventory, LN also uses this order number.

### Related receipt orders

The application uses the lot or serial numbers and the order number of the related receipt order to create outbound advice. The related receipt order initiated the receipt of the inventory to be issued and is linked to the order for which the outbound advice is created.

These types of orders are related to a receipt order:

- **Maintenance Sales Order** to **Maintenance Work Order**
- **Maintenance Work Order** to **Maintenance Sales Order**
- **Customer Claim** to **Supplier Claim**
- **Supplier Claim** to **Customer Claim**

It is allowed to issue lot or serialized inventory for different projects. Therefore, the project of the available inventory for the lot or serial and the related order is not required to match the project of the outbound advice.

### No related receipt orders

To create outbound advice for orders not related to receipt orders, the application ignores inventory received through orders related to other issuing orders.

# Examples of orders with or without related receipt orders

## Examples of related receipt orders

- **Maintenance Work Order with related Maintenance Sales Order**
  Lot A containing cell phones is received for **Maintenance Sales Order** A. **Maintenance Work Order** B, with instructions to check and replace the batteries, is created from **Maintenance Sales Order** A. Therefore, **Maintenance Sales Order** A is the related receipt order of **Maintenance Work Order** B.

  When the repairs for **Maintenance Work Order** B are due, the cell phones must be issued to the repair shop. For this purpose, the application creates outbound advice for lot A that was received with **Maintenance Sales Order** A.

  Items belonging to lot A received with orders other than **Maintenance Sales Order** A are ignored for the outbound advice.
- **Maintenance Sales Order with related Maintenance Work Order**
  Lot A consisting of the repaired cell phones is received again in the warehouse for **Maintenance Work Order** B. Outbound advice is created for **Maintenance Sales Order** A to issue lot A in order to return the cell phones to the customer.
- **Supplier Claim with related Customer Claim**
  Based on **Customer Claim** C, a damaged compressor pump is received in the warehouse of wholesaler D. Wholesaler D creates **Supplier Claim** E to send the damaged pump to their supplier.
- **Customer Claim with related Supplier Claim**
  A new compressor pump is received in wholesaler D's warehouse based on **Supplier Claim** E. Wholesaler D completes **Customer Claim** C by shipping the new compressor pump to the customer.

## Example of an order without a related receipt order

To fulfill a customer demand for cell phone batteries, outbound advice is created for sales order X, which is not related to a receipt order. For sales order X, the application must ignore the inventory received with **Maintenance Sales Order** A in the previous example.

# Sessions displaying customer owned order related inventory

To create outbound advice for project pegged customer owned inventory that is low volume serialized or low volume lot controlled, the lot or serial numbers of the inventory must match those of the outbound

order lines. If the order that initiated the outbound advice is related to the receipt order of the inventory, LN also uses this order number.

Order related customer owned inventory is displayed in these sessions:

- **Customer Owned Receipts (whwmd2550m100)**
  Displays all customer owned inventory, but lot or serial numbers are not displayed if the inventory is project pegged and low volume lot-controlled or serialized. This is because the application also uses the information from this session to determine the financial value of project pegged inventory.

  Storing the low volume lot and serial numbers of project pegged inventory in this session would hamper the proper creation of financial integration transactions, because the value of project pegged inventory is based on the project, and not on the low volume lot or serial number.

  Therefore, in these cases the low volume lot and serial numbers are displayed in the Order related Customer Owned Inventory by Warehouse and Lot (whltc1509m000) session. You can access the Order related Customer Owned Inventory by Warehouse and Lot (whltc1509m000) session from the Customer Owned Receipts (whwmd2550m100) session.
- **Order related Customer Owned Inventory by Warehouse and Lot (whltc1509m000)**
  Displays customer owned lot-controlled inventory that is received with Service related orders such as **Maintenance Sales Order** and **Maintenance Work Order**.
- **Warehouse - Item - Lots Inventory (whltc1505m000)**
  Displays high and low volume lot inventory by warehouse. From this session, you can access the Order related Customer Owned Inventory by Warehouse and Lot (whltc1509m000) session.
- **Item - Serials and Warehouses (whltc5100m000)**
  Displays low volume serialized inventory and the orders that initiated the receipt of the inventory. The application uses the serial numbers and the related receipt orders from this session when creating outbound advice for outbound orders with related receipt orders.

# Chapter 5
# Intermediate Consignee

5

## Intermediate consignees

Various customers require their suppliers to ship their goods to an intermediate consignee, where the goods are repacked or redistributed before being sent on to the final destination at the customer's. All logistics, and, if applicable, tax and customs handling are taken care of by the customer.

### Process flow

If intermediate consignees are applicable, the intermediate consignee code is transmitted from the customer (the OEM) to the supplier using EDI and the Schedule BOD.

When the Schedule BOD information is transferred to LN, the intermediate consignee code is added to the sales release line details and then transferred to the sales schedule lines in Sales Control. From there, this code is transferred to the outbound-order lines and the loads in Warehousing.

Because the intermediate consignee code from the customer's EDI message does not include an address, the intermediate consignee address from the Intermediate Consignees (tccom1161m000) session is added to the sales release line detail when the intermediate consignee code from the BOD is added to the sales release line detail.

If the information from the supplier includes a ship-from warehouse, LN looks for a matching ship-from warehouse in the Intermediate Consignees (tccom1161m000) session. If found, the intermediate consignee that is linked to the ship-from warehouse in the Intermediate Consignees (tccom1161m000) session is used. See Ship-from warehouse determines intermediate consignee.

Next, when the intermediate consignee information is transferred to the sales schedule line, LN checks whether the intermediate consignee code is specified for the sold-to or ship-to business partner.

If not specified, that is, the customer sent an intermediate consignee code that is unknown to the supplier, the sales release cannot be processed. The user must manually specify a matching intermediate consignee code to continue processing.

# Setup

Intermediate consignees are defined in the Intermediate Consignees (tccom1161m000) session. For each intermediate consignee, you must specify the address and the ship-to business partner, sold-to business partner, or both, who require their suppliers to use the intermediate consignee.

If a customer has various locations, for example, production plants, and goods destined for these locations must pass through the same intermediate consignee, this setup is required:

1. Define the customer as a sold-to business partner.
2. Define the locations as ship-to business partners.
3. Define the intermediate consignee.
4. Define the intermediate consignee's address.
5. Link the sold-to business partner of the customer to the intermediate consignee.

Consequently, all ship-to business partners of the sold-to business partners can use the specified intermediate consignee.

If not all ship-to business partners of the sold-to business partner use the same intermediate consignee, you must specify the relevant intermediate consignee for each ship-to business partner.

**Note**

If intermediate consignee codes are not provided by the customer through EDI, you can manually specify intermediate consignees in the relevant sessions in Sales Control and Warehousing.

In these sessions, you can specify an intermediate consignee by zooming to the Intermediate Consignees (tccom1161m000) session:

- Sales Release Line Details (tdsls3515m000)
- Sales Release Lines - Sequence Shipping Schedule (tdsls3116m000)
- Sales Release Line Details - Pick-up Sheet (tdsls3116m100)
- Sales Release Lines - Sequence Shipping Schedule (tdsls3116m200)
- Sales Contract Lines (tdsls3501m000)
- Sales Contract Lines (tdsls3501m100)
- Sales Schedule Lines (tdsls3107m000)
- Pick-up Sheet (tdsls3107m200)
- Sales Schedule Lines (tdsls3107m300)
- Pick-up Sheet (tdsls3107m400)
- Sales Schedule Planned Warehouse Orders (tdsls3520m000)
- Sales Schedule Planned Warehouse Order Links (tdsls3521m000)
- Sales Schedule Planned Warehouse Order Links (tdsls3521m100)
- Outbound Order Lines (whinh2120m000)
- Loads (whinh4140m000)
- Load (whinh4640m000)

## Warehousing

The intermediate consignee is used in load building to consolidate the goods that must be shipped to the same intermediate consignee.

## Freight

In Freight, intermediate consignees are not supported. The pooling points provided by the Freight load building functionality are not used as intermediate consignees.

**Note**

For a Warehousing load that includes a shipment line based on a freight order, an intermediate consignee cannot be specified.

# Chapter 6
# Project Cost Peg Distribution

6

## Peg distribution in the outbound process

During the outbound process, issuing project pegged goods from a warehouse results in inventory transactions that are based on the peg distribution.

During the outbound advice and during inspections, the outbound order line cost peg distribution is updated with the advised quantities, approved quantities and the rejected quantities. When the goods arrive at the staging location and are shipped, the actual pegs are created. During the confirmation process, the shipment line peg distribution is created.

### Generating outbound advice

While generating an outbound advice for a pegged outbound order line, additional inventory checks are performed to determine the pegged inventory that must be advised. LN first searches for the available stock points. If the stock point is identified, the outbound order line cost peg distribution is advised based on the available quantity at the stock point and the available quantity in the project pegged inventory. The peg distribution is based on the earliest required date.

When determining the quantity that must be advised for each separate peg line, this calculation is performed before searching for the project pegged inventory:

```
Quantity to be advised = Required Quantity - Advised Quantity - Rejected
Quantity
 - Shipped Quantity - Not Shipped Quantity - Expected Not Shipped Quantity

Quantity to be advised = Minimum (To be distributed (Stock point Quantity),
 To be Advised )
```

This table explains the quantity that must be advised:

| Required Quantity | Advised Quantity | Shipped Quantity | Not Shipped Quantity | To be Advised Quantity |
|---|---|---|---|---|
| 10 | 10 | 10 | 0 | 0 (10 – (10 – 0)) |
| 20 | 10 | 10 | 0 | 10 (20 – (10 – 0)) |
| 20 | 20 | 10 | 10 | 10 (20 – (20 – 10)) |
| 20 | 20 | 10 | 0 | 0 (20 – (20 – 0)) |
| 20 | 20 | 15 | 5 | 5 (20 – (20 – 5)) |
| 20 | 20 | 0 | 20 | 20 (20 – (20 – 20)) |

After the to be advised quantity is retrieved, the project pegged inventory search engine is activated.

These scenarios exist:

- No shortages, full advise
- Shortage on project pegged inventory
- Shortage on stock point inventory
  - Part that can be advised has no shortage in project pegged inventory
  - Part that can be advised has a shortage in project pegged inventory

## No shortages, full advise

Initial position of the inventory:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|
| WH01 | item001 | 100 | 0 | 100 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 40 | 0 | 40 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 40 | 0 | 40 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 20 | 0 | 20 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Open |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 0 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 0 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 0 | 10/29/2011 |

In the example, you can see that the outbound order line can be advised because the inventory levels are sufficient.

This example displays results after an outbound advice is created:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|
| WH01 | item001 | 100 | 40 | 60 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 40 | 10 | 30 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 40 | 20 | 20 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 20 | 10 | 10 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Advised |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 |

**Outbound Order Line Cost Peg Distribution (whinh290)**

| Order Origin | Order | Line | Se-quence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Re-quired Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 10 | 10/30/2011 |
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 20 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 10 | 10/29/2011 |

**Note**

Only one outbound advice is created. The outbound order line cost peg distribution is updated with the advised quantity for each peg.

## Shortage on project pegged inventory

The cost peg transfer functionality enables you to track the shortages in project pegged inventory. For more information, refer to Cost peg transfers in Warehousing.

Initial position of the inventory:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|
| WH01 | item001 | 100 | 60 | 40 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 20 | 0 | 20 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 10 | 0 | 10 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 70 | 60 | 10 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Open |

**Outbound Order Line Cost Peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 0 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 0 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 0 | 10/29/2011 |

In the example, peg line 20 has a higher priority, because the required date is earlier.

The resulting inventory after the outbound advice is created (without the use of transfer logic) is listed in these tables:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 100 | 90 | 10 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 20 | 10 | 10 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 10 | 10 | 0 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 70 | 70 | 0 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Partially Advised |

**Outbound Order Line Cost Peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 10 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 10 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 10 | 10/29/2011 |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 30 |

## Shortage on stock point inventory

The possible scenarios for stock point inventory shortage:

### The part that can be advised has no shortage in the project pegged inventory

In this example, there is not enough inventory available. However, the part of the inventory that can be advised must also be handled.

Initial position of the inventory:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 20 | 30 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 10 | 0 | 10 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 30 | 20 | 10 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 10 | 0 | 10 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Open |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 0 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 0 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 0 | 10/29/2011 |

A shortage of 10 pieces is present on the inventory level. The advice can be created only for the available pegged inventory. LN generates a message for shortage and an outbound advice of the available inventory is created. Following is the resulting inventory after the outbound advice is generated:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 50 | 0 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 10 | 10 | 0 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 30 | 30 | 0 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 10 | 10 | 0 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Partially Advised |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 10 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 10 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 10 | 10/29/2011 |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 30 |

### The part that can be advised has a shortage in the project pegged inventory

There is a shortage in the project pegged inventory.

Initial position of the inventory:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 20 | 30 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 10 | 0 | 10 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 5 | 0 | 0 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 35 | 20 | 15 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Open |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 0 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 0 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 0 | 10/29/2011 |

There is a shortage of 10 pieces on the inventory level. In the part that can be advised, a shortage of 5 pieces is also identified on the project pegged inventory. In this situation, LN determines that 30 pieces can be advised. However, an additional shortage of 5 pieces is identified. Hence, only 25 pieces are available to be advised. The resulting inventory is explained in these examples:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 45 | 5 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 10 | 10 | 0 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 5 | 5 | 0 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 35 | 30 | 5 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 40 | Partially Advised |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 10 | 10 | 10/30/2011 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 20 | 5 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 10 | 10 | 10/29/2011 |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 25 |

## Create outbound advice despite inventory shortage

LN does not allow you to generate an outbound advice with an advised quantity higher than the total advised quantities of the related outbound order line cost peg distribution.

## Outbound advice ownership

LN automatically generates the outbound advice ownership when the outbound advice is created if the outbound line is project pegged. LN does not allow you to change the ownership distribution for the project pegged order lines. The ownership distribution is based on the issue ownership set on the outbound order line.

LN does not allow you to generate ownership distribution or insert, modify, delete records for pegged outbound order lines in the Outbound Advice Ownership (whinh4128m000) session.

## Inventory search engine

Inventory selection during the process of generating an outbound advice must be changed to support the project pegged inventory. When demand for a pegged item is advised, the process takes care of these peg distribution lines. So, the inventory search engine logic is extended to support the project pegged inventory.

**The initial point of these steps is that the inventory on item warehouse level is found. The search sequence for inventory:**

- Search for available inventory with the required peg.
- Search for available cost peg transfer orders (cost peg transfer orders created by Enterprise Planning or manually entered).
- Search for available excess.
- Search for available to transfer (non-excess inventory).

- Unpegged inventory.
- Alternative Items.

## Manual outbound advice

For a manually created outbound advice, when there is insufficient inventory to allocate for the manually entered advised quantity, LN displays an error message. The cost peg transfer logic is also executed.

## Manual changes on outbound advice

When you modify the outbound advice quantity, LN updates the advised quantity on the underlying peg distribution.

In case of a decrease in the quantity, a peg redistribution is initiated. The decrease in advised quantity must be based on the latest required date. For example:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 50 | 0 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | 100 | 100 | 20 | 20 | 0 |
| WH01 | item001 | proj2 | elem2 | acti2 | 100 | 100 | 30 | 30 | 0 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 50 | Advised |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 20 | 20 | 10/30/2011 |
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 30 | 30 | 11/1/2011 |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 50 |

When you change the advised quantity to 45, the following is the result:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 45 | 5 |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 60 |

## Undo outbound advice

When an advice is removed, the advised quantity on the deleted outbound advice line must be removed from the outbound order line cost peg distribution.

## Process pick

When the user processes the picking list, LN also processes the pending cost peg transfers for the outbound advice that is picked.

## Outbound advice for returns

Advising is done based on the latest required date; the pegs with the latest required date are advised first.

## Creation of shipment line cost peg distribution

When the shipment lines are confirmed, the shipment line cost peg distribution is created for shipment lines related to an outbound order line that is pegged. The shipped quantities are distributed over the pegs for the shipment lines. The distribution is explained in these examples:

**Warehouse - Item Inventory (whwmd215)**

| Warehouse | Item | Inventory on hand | Location Allocated Quantity | Available quantity |
|---|---|---|---|---|
| WH01 | item001 | 50 | 50 | 0 |

**Project Pegged Inventory (whwmd260)**

| Warehouse | Item | Project | Element | Activity | Extension | Cost Component | Inventory on Hand | Location Allocated Quantity | Available Quantity |
|---|---|---|---|---|---|---|---|---|---|
| WH01 | item001 | proj1 | elem1 | acti1 | | | 20 | 20 | 0 |
| WH01 | item001 | proj2 | elem2 | acti2 | | | 10 | 10 | 0 |
| WH01 | item001 | proj2 | elem3 | acti2 | | | 20 | 20 | 0 |

**Outbound Order Line (whinh220)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Ordered Quantity | Status |
|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 50 | Open |

**Outbound Advice (whinh225)**

| Order Origin | Order | Line | Sequence | Item | Warehouse | Advised Quantity |
|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | item001 | WH01 | 50 |

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 20 | 20 | 10/30/2011 |
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 10 | 10 | 11/1/2011 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 20 | 20 | 10/29/2011 |

For this situation the following shipment lines are created:

**Shipment Lines (whinh431)**

| Shipment | Shipment Line | Order Origin | Order | Line | Sequence | Item | Shipped Quantity |
|---|---|---|---|---|---|---|---|
| SHIP00001 | 10 | Sales | SLS000001 | 10 | 1 | item001 | 30 |
| SHIP00002 | 10 | Sales | SLS000001 | 10 | 1 | item001 | 20 |

**Shipment Lines (whinh428)**

| Shipment | Shipment Line | Peg Line | Project | Element | Activity | Required Date | Shipped Quantity |
|---|---|---|---|---|---|---|---|
| SHIP00001 | 10 | 10 | proj1 | elem1 | acti1 | 10/30/2011 | 10 |
| SHIP00001 | 10 | 30 | proj2 | elem2 | acti1 | 10/29/2011 | 20 |

When the shipment is confirmed, the shipped quantity is updated on the outbound order line cost peg distribution

**Outbound Order Line cost peg Distribution (whinh290)**

| Order Origin | Order | Line | Sequence | Peg Line | Project | Element | Activity | Ordered Quantity | Advised Quantity | Required Date | Shipped Quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sales | SLS000001 | 10 | 1 | 10 | proj1 | elem1 | acti1 | 20 | 20 | 10/30/2011 | 10 |
| Sales | SLS000001 | 10 | 1 | 20 | proj2 | elem2 | acti2 | 10 | 10 | 11/1/2011 | 0 |
| Sales | SLS000001 | 10 | 1 | 30 | proj2 | elem3 | acti2 | 20 | 20 | 10/29/2011 | 20 |

## Underdeliveries and overdeliveries

For underdeliveries, the quantity not delivered must be distributed on the peg distribution, beginning with the peg line with the latest required date. For overdeliveries, the quantity overdelivered must be distributed equally over the available peg lines for the outbound order line.

## Not shipped quantities

The peg line distribution data is transferred to the transfer order / adjustment order only if a not-shipped quantity exists on peg distribution. During the confirmation process the not-shipped quantity is updated on the outbound order line cost peg distribution and the shipment line cost peg distribution.

## Shipments for returns

When the items are not shipped to the destination, but are shipped back to the origin, a reverse required date priority is applied when generating the shipment line cost peg distribution during the confirmation of the return shipment line. As item inventory is decreased, LN changes the pegged inventory with the latest required dates.

## Cost peg transfers

Cost peg transfers enable transfer of costs between two different pegs (pegged to unpegged and vice versa). The cost peg transfers do not physically move the inventory but only transfer the costs of the inventory. Cost peg transfers are performed within the same warehouse. It is not possible to transfer the goods across warehouses. For more information, refer to Cost peg transfers in Warehousing

## Transfer (manual) orders / Transfer orders

LN allows you to use an inbound and outbound cost peg distribution to specify transfer manual orders to transfer actual goods between warehouses. LN generates the outbound order line cost peg distribution

based on the project pegged inventory. The cost peg distribution can also be created manually and transferred to the inbound line cost peg distribution.

## Change warehouse order at a later stage

LN allows you to modify the outbound warehousing order data related to the sales order/schedule. The data can be modified for warehousing orders of all origins. You can also define up to which outbound procedure step the data can be modified. For more information, refer to To modify the outbound warehousing order data.

## Additional costs on shipment header/line

When the cost item that is mandatory pegged is added as additional cost to the shipment, the cost item is not displayed because LN cannot decipher which pegs must be added to the additional cost line.

When the cost item that is mandatory pegged is added as additional costs on the shipment line, or when the parent shipment line has a peg distribution, LN copies the peg distribution data to the additional cost line. The cost peg distribution of this additional cost line is transferred to the sales cost order. For more information, refer to Additional costs - shipment based

# Chapter 7
# Shipment and Load Building

7

## The shipment procedure

The shipment procedure comprises the activities that you must perform in LN to ship goods that were issued from the warehouse by means of the outbound procedure.

The shipment procedure includes these steps, also called activities:

1. Freeze/Confirm Shipments/Loads (whinh4275m000) (mandatory)
2. Print shipping documents. These types of shipping documents are available:
   - Print Bills of Lading (whinh4470m000)
   - Print Packing Slips (whinh4475m000)
   - Print Packing Lists (whinh4476m000)
   - Print Delivery Notes (whinh4477m000)
   - Print Shipping Manifest (whinh4478m000)

You are not required to include non-mandatory activities in your warehousing procedures. In addition, you can specify whether an activity must be performed manually or automatically. For information on how to define warehousing procedures, see *Warehousing procedures (p. 16)*.

### Prepare shipment procedure: adjust loads, shipments, and shipment lines

Before you freeze or confirm the shipments and print the shipment documents, you can, if required, change the item quantities of the shipments and adjust the shipment and load structure.

You can specify quantities that cannot be shipped and create a transfer order to return the not-shipped goods to the storage location or create an automatic adjustment to remove the items from the inventory. For more information, refer to *Not-shipped quantities (p. 88)*.

While the shipment and loads are still being adjusted, the **Open** status is not changed.

# Step 1. **Freeze/Confirm Shipments/Loads**

In the Freeze/Confirm Shipments/Loads (whinh4275m000) session, you can freeze and confirm shipment lines, shipments, and loads. Freezing is optional, confirming is mandatory.

## Freeze shipments, shipment lines or loads

Freezing shipments, shipment lines, and loads means that major changes are not allowed because they are ready for shipping, but you can print the shipping documents, if printing shipping documents is included in the shipment procedure. For more information, refer to *Shipment and load status (p. 69)*.

Freezing is optional, you can skip this step if freezing is not part of your business practice. To make freezing a mandatory step in your shipment procedure, select the **Freeze Mandatory** check box in the Warehousing Order Types (whinh0110m000) session.

| To freeze... | Use the Freeze command in... |
|---|---|
| Shipment lines | The Shipment Lines (whinh4131m000) session |
| Shipments | The Shipments (whinh4130m000) session |
| Loads | The Loads (whinh4140m000) session |

To freeze a range of shipment lines, shipments, or loads, use the Freeze/Confirm Shipments/Loads (whinh4275m000) session.

**Note**

You can only freeze shipment lines, shipments, and loads if the status is **Open**.

## Reopen

If changes are required for any frozen shipment lines, shipments, or loads, you must reopen these shipment lines, shipments, or loads to be able to make these changes. You can only reopen shipment lines that have the **Frozen** status. To reopen shipment lines, use the **Re-open** command on the appropriate menu of the Shipment Lines (whinh4131m000) session.

When you reopen a shipment line, the related shipment and load are also reopened. The shipment documents must be printed again, after the final changes to the shipments have been made. The status of the handling units of the shipment and shipment line are changed from **Shipment Frozen** to **Shipment Open**. If you again freeze a shipment line or shipment and a handling unit already exists for the shipment or shipment line, the handling unit is regenerated automatically.

## Shipment acceptance

To perform source acceptance, you must submit a shipment for acceptance and specify the accepted or not-shipped quantities when the shipment's status is **Open**. To complete the *Source acceptance - procedure (p. 130)*, you must freeze the shipment.

If a shipment is submitted for acceptance, the shipment's status is **Open**, but:

- You cannot modify the shipment except for the source acceptance fields.
- No new lines can be added to the shipment.

## Confirm shipments, shipment lines or loads

Confirming is mandatory in the shipment procedure. This step entails processing the shipments, shipment lines, and loads generated during the outbound procedure. When the goods are loaded and are leaving the warehouse, you must confirm the shipment and loads. As a result, the status of the shipments and loads changes to **Confirmed**.

When shipments are set to **Confirmed**, the status of the related outbound order lines and handling units changes to **Shipped**.

**Note**

- If the **Freeze Shipments/Loads** activity is performed automatically in the shipment procedure, shipments and loads are automatically confirmed. In that case, you cannot freeze shipment lines, shipments, or loads.
- If the **Freeze/Confirm Shipments/Loads** activity is performed automatically, LN confirms the shipment lines, shipments, and loads and prints the shipping documents without enabling you to make any changes to the shipment line quantities or the shipment and load structure.
- If the shipment documents must be printed automatically, printing is started as soon as the status of the shipment or load changes from **Open** to **Frozen** or **Confirmed**.

## Step 2. Print shipping documents

If shipping documents are used in the outbound flow of your warehouse, the shipping documents are printed after the shipment lines, shipments, and loads have obtained the **Frozen** status or the **Confirmed** status.

The settings of the shipment procedures specified in the Activities by Procedure (whinh0106m000) session determine whether the documents are printed automatically or manually. These types of shipping documents are available:

- Print Bills of Lading (whinh4470m000)
- Print Packing Slips (whinh4475m000)
- Print Packing Lists (whinh4476m000)
- Print Delivery Notes (whinh4477m000)
- Print Shipping Manifest (whinh4478m000)

# Shipments and loads

A load consists of one or more shipments, and a shipment has one or more shipment lines.

Loads, shipments, and shipment lines are generated by Warehousing or by Freight. During the outbound procedure, Warehousing generates loads and shipments for outbound order lines with status **Staged**, unless an actual Freight load plan is present. For more information, refer to *Freight loads and shipments (p. 66)*, *Warehousing loads and shipments (p. 67)*, and *The outbound procedure (p. 23)*.

You can also manually create loads and shipments, which is usually done to adjust or replace generated loads and shipments.

Optionally, you can manually insert shipping containers, which provide a detailed insight into the packing structure of the shipments. If shipping containers are used, a load contains one or more shipping containers, a shipping container contains one or more shipments, and a shipment has one or more shipment lines. For further information on shipping containers, see *Shipping structures (p. 101)*.

## Freight loads and shipments

Freight can generate loads and shipments for warehousing order lines and originating order lines. To generate loads and shipments, Freight must generate freight orders for the warehousing orders or originating order lines first. The loads and shipments that Freight generates from the freight orders are contained in a load plan. After the load plan is made **Actual**, Freight passes on these loads and shipments to Warehousing, where they are displayed in the Planned Loads/Shipments (whinh4180m000) session.

If Warehousing has generated loads and shipments for a particular warehousing order before Freight 's load plan based on the freight orders of the warehousing order is made **Actual**, the loads and shipments generated by Warehousing prevail. Warehousing 's loads and shipments will populate the Planned Loads/Shipments (whinh4180m000) session, and will replace the load and shipments of the (not yet Actual) load plan. However, if the **Overrule Load Plan** check box is selected in the Outbound Order Lines (whinh2120m000) session, the load plan is overruled, even if it is actual.

### Settings for generating freight orders for warehousing order lines

Freight can generate freight orders for warehousing order lines if:

- In the Warehousing Order Types (whinh0110m000) session, the **Generate Freight Order Automatically** check box is selected for the warehousing order type of the order line.
- For outbound order lines, the **Generate Freight Order from Warehousing** check box is selected in the Outbound Order Lines (whinh2120m000) session.
- For inbound order lines, the **Generate Freight Order from Warehousing** check box is selected in the Inbound Order Lines (whinh2110m000) session.

The values of the **Generate Freight Order from Warehousing** check box in the Outbound Order Lines (whinh2120m000) session and the **Generate Freight Order from Warehousing** check box in the Inbound Order Lines (whinh2110m000) session are defaulted from the **Generate Freight Order Automatically** check box in he Warehousing Order Types (whinh0110m000) session.

**Note**

- Freight orders can be generated from various originating orders, such as:
  - Sales orders
  - Purchase orders
  - Enterprise Planning orders
- To ignore the shipment lines of a Freight load plan for an individual outbound order line, you can select the **Overrule Load Plan** check box in the Outbound Order Lines (whinh2120m000) session.

## Warehousing loads and shipments

In Warehousing, loads, shipments, and shipment lines are generated for outbound order lines that have the **Staged** status.

To generate loads, shipments, and shipment lines, Warehousing completes these steps:

1. Generate shipment line.
2. Check if a shipment is present to which the shipment line can be linked.
3. If yes, link shipment line to shipment. For more information, refer to *Linking a shipment line to a shipment in Warehousing (p. 68)*

   If no, generate shipment.
4. Check if a load is present to which the shipment can be linked.
5. If yes, link shipment to load. For more information, refer to *Linking a shipment to a load in Warehousing (p. 69)*.

   If no, generate load and link shipment.

**Note**

- If an actual Freight load plan is present, Warehousing generates loads and shipments based on the Freight loads and shipments. For more information, refer to *Freight loads and shipments (p. 66)*.
- For production orders, the setting of the **Create Shipment** field in the Default Order Types by Origin (whinh0120m000) session determines whether shipment lines are generated.
- If the **Consolidate Stock Points in one Shipment Line** check box in the Inventory Handling Parameters (whinh0100m000) session is selected, the outbound advices of the same order line with different stock point details are consolidated into a single shipment line even if the outbound advices contain multiple:
  - Lots (in inventory)
  - Serials (in inventory)
  - Inventory Dates
  - Effectivity Units
  - E-Item Revision (via the lot)

You can view and maintain loads, shipping containers, shipments, and shipment lines in the following sessions:

- Planned Loads/Shipments (whinh4180m000). In this session, you can create loads and shipments for both inbound and outbound order lines.
- Warehousing Order Loads and Shipments (whinh4545m000)
- Loads (whinh4140m000)
- Shipping Containers (whinh4125m000)
- **Shipping Structures Graphical User Interface**
  This GBF is available from the appropriate menu of the sessions mentioned in this list.
- Move Shipment to Shipping Containers (whinh4125m100)
- Shipments (whinh4130m000)
- Shipment Lines (whinh4131m000)
- Compose Load (whinh4134m000)
- Compose Shipment (whinh4231m000)

In these sessions, you can also manually create or modify loads, shipping containers, shipments, and shipment lines. For further information, see:

- *Shipping structures (p. 101)*
- *Shipment and load status (p. 69)*
- *Manually created shipments (p. 71)*

## Linking a shipment line to a shipment in Warehousing

Various criteria are used to link a shipment line to a shipment.

A shipment line is linked to a shipment for which the following data matches the warehousing order line data of the shipment line:

- Ship-from type and ship-to type
- Ship-from code and ship-to code
- Ship-from address and ship-to address
- Delivery terms
- Point of title passage
- Delivery code
- Motive of transport
- Sales office
- Shipment procedure activities
- Route
- Carrier
- Planned delivery date. The way the planned delivery date is used is controlled by the option selected in the **Generate Shipments** group box of the Warehouses (whwmd2500m000) session.

**Note**

If the **Single Order per Shipment** check box or the **Single Order Set per Shipment** check box is selected in the Warehousing Order Types (whinh0110m000) session, a shipment can only contain shipment lines that are created from order lines of the same order or order set. For more information, refer to *Shipping structures (p. 101)*.

## Linking a shipment to a load in Warehousing

Various criteria are used to link a shipment to a load.

Normally, a shipment is linked to a load for which the following data matches the warehousing order line data of the shipment:

- Route
- Planned delivery date
- Carrier/LSP

If any of the following conditions apply as well, the shipments are aggregated into more than one load:

- Different ship-from addresses on the originating (sales) order lines.
- The **Single Order per Load** check box is selected in the Warehousing Order Types (whinh0110m000) session. For more information, refer to *Shipping structures (p. 101)*.
- The **Single Ship-to Code per Load** check box is selected in the Warehousing Order Types (whinh0110m000) session.
- The goods picked for a load exceed the maximum weight specified for the load in the **Maximum Weight** field of the Loads (whinh4140m000) Loads (whinh4140m000) session.

**Note**

If the ship-from type of the warehousing order is a warehouse, narrow shipment time intervals specified for the warehouse will cause fewer shipments to be aggregated into the same load than wide ranges. For more information, refer to **Add Orders Based On**.

# Shipment and load status

Shipments, shipment lines, and loads can have the following statuses:

- **Projected**
  Shipments, shipment lines, and loads are created when the outbound order lines are created. This is the initial status if the use of projected shipments is specified. To use projected shipments and loads, these check boxes must be selected:
  - **Projected Shipments in use** in the Inventory Handling Parameters (whinh0100m000) session
  - **Projected Shipments in use** in the Warehousing Order Types (whinh0110m000) session

- **Open**
  You can:
  - Adjust the quantities on shipment lines.
  - Add or remove shipment lines from shipments
  - Add or remove shipments from Shipping container status or loads
  - Move shipments to other shipping containers or loads
  - Add shipping containers to a load
- You cannot print shipment documents and you cannot ship the shipment.
- **Partially Frozen**
  The **Partially Frozen** status is assigned if handling units are in use, and you freeze the shipment line at the handling unit level. If multiple handling units are linked to a shipment line, a few of the handling units must be set to **Frozen**. In case of **Partially Frozen** shipment lines, LN assigns the **Frozen** status to confirmed handling units and its children. After all the handling units linked to a shipment line are set to **Frozen**, the shipment line is assigned the **Frozen** status.

  You cannot update the shipment line anymore unless triggered by an already linked open handling unit.
- **Frozen**
  The picked goods are at the staging area of the warehouse and are ready for shipment. You can print shipment documents and confirm the shipment. You can generate handling units.
  You cannot change the loads, shipping containers, shipments, and shipment lines, except for the following fields:
  - **Carrier Tracking Number** (shipment)
  - **Tracking Number** (shipment)
  - **Inventory Adjustment Date** (shipment line)

  If other changes are required, you must reopen the shipment lines first.
- **Confirmed**
  The goods have been shipped and are actually leaving the warehouse. LN performs financial and inventory transactions for the shipped items. You can print shipment documents for the goods.

**Note**

Loads present in the Planned Loads/Shipments (whinh4180m000) session have different statuses. For more information, refer to Planned Loads/Shipments Status and *Shipments and loads (p. 66)*.

## How the status is determined

The shipment's status is determined as follows:

- If at least one of the shipment lines has the status **Open**, **Partially Frozen** or **Confirming** the shipment's status is **Open**.
- If at least one of the shipment lines has the status **Frozen** and the remaining shipment lines has status **Confirmed**, the shipment's status is **Frozen**.
- If all shipment lines have the status **Confirmed**, the shipment's status is **Confirmed**.

- If a shipment line is reopened, the shipment's status also changes to **Open**.

The load's status is by default determined as follows:

- If at least one of the shipments linked to the load has the status **Open** or **Frozen**, the load's status is **Open**. Even if all shipments are **Frozen**, the load's status is still **Open** and you can add new shipments to the load.
- The load status becomes **Frozen** if you freeze the load.
- If all shipments linked to the load have the status **Confirmed**, the load's status is **Confirmed**.
- If a shipment line of a shipment that is linked to the load is reopened, the load's status also changes to **Open**.

### Shipping container status

If in the Inventory Handling Parameters (whinh0100m000) session the **Shipping Containers in use** check box is selected, you can use shipping containers.

The status of a shipping container is:

- **Open**
  If the container is empty or at least one shipment in the container has status **Open**.
- **Frozen**
  If all shipments of the container have status **Frozen**.
- **Confirmed**
  If all shipments of the container have status **Confirmed**.

For more information, refer to Overview of kit handling in Warehouse Management.

# Manually created shipments

In addition to generating shipments for warehousing orders, LN enables you to manually create shipments and shipment lines. Manual shipments are used to ship goods without performing LN warehousing procedures and related financial transactions.

You can use manual shipment and shipment lines to register goods transports for items not registered in LN, and/or goods transports for which no warehouse orders exist. For example, transports of rejected goods to the junk yard.

For manually created shipments, you can print delivery notes.

## To create and maintain manual shipments

To manually create a shipment, click 🗋 on the toolbar of the Shipments (whinh4130m000) session or the Shipment (whinh4630m000) session.

In these sessions, the following fields are mandatory:

- **Address**
- **Ship-from Type** Note that for manual shipments, only Work Center and Warehouse are available.
- **Ship-from Code**
- **Series**
- **Address**
- **Ship-toType**
- **Ship-to Code**

Because warehouse processing is not performed for manual shipments in LN, you are not required to enter a shipment procedure in the **Warehousing Procedure** field.

Note that you can replace the default series in the **Series** field.

You can link a manual shipment to a load. If you do not link the shipment to a load, LN creates a load for the shipment when the shipment is confirmed. To link the shipment to a load, in the **Load** field, select the required load. As a result, the data from the load is copied to the shipment.

If you do not select a delivery note for the shipment in the **Preliminary Delivery Note** field, LN creates a delivery note for the shipment when the shipment is confirmed, provided that the use of delivery notes is enabled for the ship-from/ship-to warehouse defined for the shipment.

For a manual shipment, LN does not create an advance shipment notice.

### To update manual shipments

You can update the following fields for manual shipments:

- **Hazardous Material**
- **Class of Risk**

The status of manual shipments are updated as a result of the freeze or confirm shipment process. For further information, see *Shipment and load status (p. 69)*.

The weight of a manual shipment is updated from the weight of the shipment lines added to the shipment.

The loading list sequence for the shipment is updated when the loading list is generated for the load to which the shipment is allocated.

### To delete manual shipments

You can delete manual shipments in the Shipments (whinh4130m000) session or the Shipment (whinh4630m000) session if the shipment status is **Open**. In the Remove Confirmed Shipments/Loads (whinh4250m000) session, you can delete manual shipments with status **Confirmed**.

### To create manual shipment lines

You can create manual shipment lines for both generated shipments and manually created shipments.

On a manual shipment line, you can enter an item present in LN or an item that does not exist in the application.

For example, you can use a manual shipment line to register a delivery in addition to the ordered delivery, such as a free gift, that is not listed on the order but must be listed on the delivery note: for each computer that you deliver you give a mouse pad for free.

To manually create a shipment line, click 🗋 on the toolbar of the Shipment Lines (whinh4131m000) session or the Shipment (whinh4630m000) session.

For manual shipment lines, the same attributes are available as for generated shipment lines, except that you cannot:

- Generate lot and serial numbers
- Generate handling units
- Create packing structures

# Conditions for shipment composition

Linking newly generated shipment lines to existing shipments is subject to the following conditions:

- The **Ship-from Type**, **Ship-from Code**, and **Ship-from Address** must match.
- **Ship-to Type**, **Ship-to Code**, and **Ship-to Address** must match.
- The statuses of the shipment lines and the parent shipments must be **Open**.
- The routes must match. If the routes do not match, a warning appears, but you can still move the shipment line to the other shipment.
- The delivery terms must match. If the delivery terms do not match, a warning appears, but you can still move the shipment line to the other shipment.
- The planned delivery date of the shipment line must be within the time frame of the shipment.
- The activities defined for the shipment procedures of the shipment line and the shipment must match.
- The carriers must match. If the carriers do not match, a warning appears, but you can still move the shipment line to the other shipment.

**Note**

These conditions also apply if you maintain handling units linked to shipments and shipment lines.

Linking existing shipment lines to other shipments is subject to the following conditions:

- The **Ship-from Type**, **Ship-from Code**, and **Ship-from Address** must match.
- **Ship-to Type**, **Ship-to Code**, and **Ship-to Address** must match.
- The statuses of the shipment lines and the parent shipments must be **Open**.
- The activities defined for the shipment procedures of the shipment line and the shipment must match.

- The shipment lines do not contain multishipment line bottom-level handling units. Such handling units can only be moved between shipment lines linked to the same shipment.

**Note**

- Multishipment line handling units are allowed if the **Allow Multi Item for Shipping** check box is selected in the Handling Unit Templates (whwmd4160m000) session.
- If one of the single order settings applies, the source shipment line and the destination shipment line must belong to the same warehousing order or order set.

# Chapter 8
# Shipment and Load Building Options

8

## Load building based on the Single Ship-to Code per Load check box

The existing load building criteria are:

- Route
- Planned Delivery Date
- Delivery Carrier
- Pick-up Carrier
- Maximum Load weight
- Single Order by Load

You can use the **Single Ship-to Code per Load** check box in the Warehousing Order Types (whinh0110m000) session to create loads that have shipments with identical ship-to codes. If this check box is selected, LN groups the shipments into a load in the following manner:

- Outbound order lines that have the same ship-to code are put on the same load, but only if the other load building criteria allow this.
- Outbound order lines that have different ship-to codes are put on different loads.

## Shipment building based on shipment reference

Shipment building is the process that automatically creates shipments based on picked outbound advices.

The shipment building criteria are:

- Ship-from Type, Ship-from Code, Ship-from Address
- Ship-to Type, Ship-to Code, Ship-to Address
- Planned for Load Plan (Y/N)

- Manual Shipment (Y/N)
- Office
- Office Company
- Route
- Terms of Delivery
- Point of Title Passage
- Motive of Transport
- Carrier
- Planned Delivery Date
- Delivery Point
- Shipment Reference

The shipment reference determines, among other criteria, how the goods picked from the supplier warehouse are grouped into shipments. The items on sales schedule lines that have the same shipment reference must be shipped as one shipment to the customer. In the automotive business this is called a Pickup Sheet (PUS) process. The shipment reference is primarily populated for warehouse orders with origin *Sales Schedule*. The value of the shipment reference is passed from Order Management to Warehousing by the **Shipment Reference** field in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session.

Based on the *Shipment Reference*, these shipment building parameters are available in the Warehousing Order Types (whinh0110m000) session:

- **Unique Shipment Reference per Shipment**
- **Single Shipment Reference per Shipment**

## Unique Shipment Reference per Shipment

If this check box is selected, LN creates a unique shipment for each shipment reference number. Creation of multiple shipments for the same shipment reference is not allowed in the following cases:

- The Ship-to business partner of the shipments is same.
- The Ship-to business partner is different, but shipments have the same Sold-to business partner. Conversely, this means that when the ship-to BP's differ and their related sold-to BP's differ, LN allows the same shipment reference for creation of multiple shipments.

This parameter has the following consequences:

- The *Shipment Reference* criterion overrules the shipment building criterion for *Planned Delivery Date*. When the planned delivery date is not the same for all schedule lines, but the schedule lines have the same shipment reference, LN creates one shipment that contains all the schedule lines for this shipment reference.
- LN does not create outbound advices and shipment lines for *pickup sheet lines* that have full shortage of items. Other lines of the same pickup sheet can be picked and shipped. The outbound line for which the shortage of items occurred remains open and has the pickup sheet number of the already shipped pickup sheet. Processing of this remaining outbound line can

result in a shipment that has the already used pickup sheet number. You can cancel the schedule line or provide the schedule line with a new pickup sheet number.

**Note**

- If a confirmed shipment already exists for the same shipment reference, LN stops the creation of the shipment and displays an error message.
- Splitting/composing shipments must not result in multiple shipments per pickup sheet number and vice-versa. If shipment composition results in duplicate pickup sheet numbers, LN stops the creation of shipments and displays an error message.

## Single Shipment Reference per Shipment

If this check box is selected, LN allows creation of multiple shipments for the same *Shipment Reference*. This parameter has the following consequences:

- For two shipment lines that have the same shipment reference and different planned delivery dates, LN creates two shipments that have the same shipment reference.
- Outbound Lines that have different shipment reference numbers are put on different shipments.
- If other shipment building criteria allow, outbound lines that have the same shipment reference number are put on the same shipment. Otherwise, outbound lines are put on separate shipments.

### The shipment reference scenarios

| Contents Existing Shipment Header | Shipment Reference Outbound Line | Related Order Type is Single Reference | Action |
|---|---|---|---|
| Single Reference=No, Shipment Reference= empty | empty | no | Add to Shipment |
| | empty | yes | Add to Shipment |
| | AAA | no | Add to Shipment |
| | AAA | yes | Create New Single Reference Shipment |
| Single Reference=No, Shipment Reference= AAA In this scenario, the shipment reference at the shipment header | empty | no | Add to Shipment |
| | empty | yes | Add to Shipment |
| | AAA | no | Add to Shipment |

| | | | |
|---|---|---|---|
| is manually filled by the end-user. | AAA | yes | Add to shipment if all shipment lines have reference "AAA" and make it a single reference shipment, otherwise create new single reference shipment |
| | BBB | No | Add to Shipment |
| | BBB | Yes | Create New Single Reference Shipment |
| Single Reference=Yes, Shipment reference= AAA | empty | no | create new shipment |
| | empty | yes | create new shipment |
| | AAA | no | Add to Shipment |
| | AAA | Yes | Add to Shipment |
| | BBB | No | Create new shipment |
| | BBB | Yes | Create New Single Reference Shipment |
| Single Reference=Yes,Shipment Reference=Empty | Not Applicable | | |

## Freight integration

The **Shipment Reference** field which, among others, is used for the *Pickup Sheet* process, is transferred from the Outbound Order Lines (whinh2120m000) session to the corresponding freight order if Freight is implemented. In the Freight package, this shipment reference must be taken into account, if filled, as a *Shipment Building* criterion during the Load Building procedure through the Generate Plan (fmlbd0280m000) session.

That is, if the **Single Shipment Reference per Shipment** check box is selected and the Generate Plan (fmlbd0280m000) session is run, multiple shipments must be generated if different shipment references are applicable, even though these shipments are to be delivered at the same destination address at the same time, that is, within the same load.

If the **Unique Shipment Reference per Shipment** check box is selected and the Generate Plan (fmlbd0280m000) session is run, for example, for a particular period/freight order range and the same Reference is linked to multiple freight order lines (outbound lines) with different delivery times/dates, LN must still generate one single shipment per reference. This implies that the delivery time/date range on the order lines is extended so that both lines can be included in one and the same shipment. To create one single shipment, other criteria, if applicable, must also be met.

# Shipment building based on delivery points

Shipment building is the process that automatically creates shipments based on (picked) outbound advices.

The value of the delivery point is passed from Sales to Warehousing by the **Delivery Point** field in the Sales Schedule Lines (tdsls3107m000) session. The delivery point is passed to the warehouse order outbound line when a schedule line is transferred to Warehousing.

These shipment building criteria are available:

- Ship-from Type, Ship-from Code, Ship-from Address
- Ship-to Type, Ship-to Code, Ship-to Address
- Planned for Load Plan (Y/N)
- Manual Shipment (Y/N)
- Office
- Office Company
- Route
- Delivery Terms
- Point of Title Passage
- Motive of Transport
- Carrier
- Planned Delivery Date
- Delivery Point
- Shipment Reference

Originally, in LN, the ship-to business partner and related ship-to address is the most detailed level at which the destination of goods is defined. However, often the premises of customers / Original Equipment Manufacturers (OEM) are huge and goods can be received at multiple delivery points. For efficient goods handling, the supplier / shipping company must know the specific delivery point at which the goods must be unloaded. This objective is achieved by adding delivery points to delivery addresses and including them as shipment building criteria.

LN groups the outbound advices that have the same *Delivery Point* as shipment lines in one shipment. You can use the **Single Delivery Point per Shipment** check box in the Warehousing Order Types (whinh0110m000) session to group the shipment lines by delivery points during shipment building. If this check box is selected, LN groups the outbound lines in the following manner :

- Outbound lines that have the same delivery point are put on the same shipment, as shipment lines, provided other shipment building criteria allow this. Otherwise, outbound lines are put as shipment lines on separate shipments. This effectively means that the creation of multiple shipments for the same delivery point is permitted in specific cases.
- Outbound Lines that have different delivery points are put on different shipments.

The following example explains the scenario in which shipments are created based on delivery points:

| Order | Position | Ship-to BP | Delivery Point | Shipment |
|---|---|---|---|---|
| SSC000123 | 10 | VW | Dock A | SHP000234 |
| SSC000123 | 20 | VW | Dock B | SHP000235 |
| SSC000124 | 10 | Opel | Dock A | SHP000236 |
| SSC000125 | 10 | VW | Dock A | SHP000234 |
| SSC000126 | 10 | Opel | | SHP000237 |

*Freight Integration*

In case a delivery point is present on an outbound order line and the **Single Delivery Point per Shipment** check box in the Warehousing Order Types (whinh0110m000) session is selected, the delivery point is passed to the corresponding freight order (if Freight is implemented). The **Single Delivery Point per Shipment** check box cannot be modified in Freight. In other words, Freight load building always follows the shipment building instructions from Warehousing. This implies that the planning engine in Freight builds separate shipments per delivery point instead of per delivery address, which may result in multiple shipments per unloading address within one load.

# Example of the Generate Shipments options

The time interval of a shipment is controlled by the options selected in the **Generate Shipments** field of the Warehouses (whwmd2500m000) session.

## Example

**Warehousing order 100123**

| Outbound order line | Planned delivery date |
|---|---|
| 10 | 2 February 09:00 |
| 20 | 2 February 14:00 |

| | |
|---|---|
| 30 | 3 February 09:00 |
| 40 | 4 February 14:00 |

If you generate and release outbound advice for warehousing order 100123, based on the option specified, LN generates the following shipments, shipment date ranges, and shipment lines:

## Option **Per Exact Planned Delivery Date/Time**

| Shipment | Shipment Date Interval | Shipment Date/Time To | Shipment line | Originating outbound order line |
|---|---|---|---|---|
| 100050 | 2 February 09:00 | 2 February 09:00 | 10 | 10 |
| 100060 | 2 February 09:00 | 2 February 14:00 | 10 | 20 |
| 100070 | 3 February 09:00 | 3 February 09:00 | 10 | 30 |
| 100080 | 4 February 09:00 | 4 February 14:00 | 10 | 40 |

## Option **For Planned Delivery Date**

| Shipment | Shipment Date Interval | Shipment Date/Time To | Shipment line | Originating outbound order line |
|---|---|---|---|---|
| 100050 | 2 February 00:00 | 2 February 23:59 | 10 and 20 | 10 and 20 |
| 100060 | 3 February 00:00 | 3 February 23:59 | 10 | 30 |
| 100070 | 4 February 00:00 | 4 February 23:59 | 10 | 40 |

## Option **Up to and Incl. Planned Delivery Date**

| Shipment | Shipment Date Interval | Shipment Date/Time To | Shipment line |
|---|---|---|---|
| 100050 | - | 4 February 23:59 | 10, 20, 30, and 40 |

When the outbound advice is released, outbound order line 10 is processed first. While creating a shipment line for outbound order line 10, LN creates the shipment header and fills the date ranges for the **Shipment Date Interval** and **Shipment Date/Time To** fields. LN leaves the **Shipment Date Interval** field empty and fills the **Shipment Date/Time To** with the latest planned delivery date present in the outbound advice, which in this example is 4 February 14:00, and sets the time for this date to 23:59. Because the planned delivery dates of all outbound order lines are before 4 February 14:00, LN adds all of the resulting shipment lines to the shipment.

## Option **Within Time Interval**

When multiple suitable shipments exist with a valid shipment interval, the additional pick will be linked to the shipment with the earliest shipment interval start date.

Example: Generate Shipments within Time Interval [-2 hrs; + 2 hrs]

| Order | Planned Delivery Date | Shipment | Shipment Interval |
|---|---|---|---|
| Order1 | 01-04-2009; 10.00 AM | SH000001 | [08:00 AM;12:00 AM] |
| Order2 | 01-04-2009; 11.00 AM | SH000001 | [08:00 AM;12:00 AM] |
| Order3 | 01-04-2009; 13.00 PM | SH000002 | [11:00 AM;15:00 PM] |
| Order4 | 01-04-2009; 11.30 PM | SH000001 | [08:00 AM;12:00 AM] |

Order 1 leads to an initial shipment SH000001 with an interval of [08:00 – 12:00].

Order 2 is linked to the same shipment because the planned delivery date falls within the shipment interval of shipment SH000001.

Order 3 leads to the creation of a new shipment SH000002 with an interval of [11:00 – 15:00], because the planned delivery date falls outside the shipment interval of shipment SH000001.

Order 4 has a planned delivery date which falls within the shipment interval of both shipments, but Order 4 will be linked to shipment SH000001 because it has the earliest interval start date.

# The use of transport categories

In Warehousing, the transport category specified for a load is added to the shipment BOD.

For each load, a carrier is specified. The transport category defined for a carrier in the Carriers/LSP (tcmcs0580m000) session is defaulted to the load.

Carriers can provide multiple types of transport, therefore various transport categories in addition to the default transport category are available that you can specify for a load.

The transport category is also used as a load building criterion. If a transport category other than the default transport category of the carrier is specified for a load, no new shipment lines can be added to the shipments of this load. Therefore, if another transport category is required, you must change the transport category of the load after the load building process is completed.

If a shipment was created after the transport category of the load is changed, the shipment cannot be added to this load, but the shipment is added to a load for which the default transport category is specified.

If this is not required, use the Compose Shipment (whinh4231m000) session to move the shipment to the load with the changed transport category.

**Note**

In Freight, a limited number of transport categories is supported. Therefore, if a load includes shipment lines linked to a freight order, various transport categories cannot be added to the load. See the Freight section below.

## Freight

In Freight, these transport categories are unavailable:

- **Transport by Sea (Container)**
- **Transport by Rail (Container)**
- **Transport by Road (Container)**
- **Transport by Air (Charter)**
- **Contract Carrier**
- **Transport by Customer Pickup**
- **Less than Truck Load**
- **Mail**
- **Intermodal**
- **Consolidation**
- **Express Air**
- **Express Truck**
- **Express Rail**
- **Pool Point**
- **Milk Run**

Carriers for which one of these transport categories is specified in the Carriers/LSP (tcmcs0580m000) session cannot be linked to a shipping office and planning group in the Carriers/LSP by Shipping Office and Planning Group (fmfrc0160m000) session. Consequently, such carriers are unavailable for load building in Freight.

# Chapter 9
# Load and Shipment Maintenance

9

## Allow changes to shipment

If the **Allow Changes to Shipment** check box is selected in the Shipments (whinh4130m000) session, adding or removing shipment lines is allowed until the shipment status is set to **Confirmed**.

For shipments with status **Projected**, updates from the linked outbound-order lines are allowed. You can generate, regenerate, or delete projected shipments from an outbound-order line.

If this check box is cleared, these actions are not allowed:

- Deleting the shipment, unless the status is **Confirmed**.

  Confirmed shipments can be deleted using the Remove Confirmed Shipments/Loads (whinh4250m000) session.
- Adding or removing shipment lines.
- Other updates of the shipment data.

  **Note**: for **Projected** shipments it is allowed to pick the shipment line quantities and change the status to **Open** when picking is confirmed.

Also, if you clear this check box, these options are unavailable:

- In the Shipments (whinh4130m000) session:
  - Compose Shipping Structure
  - Generate Handling Unit
  - Remove Handling Units
  - Delete
- In the Shipment Lines (whinh4131m000) session:
  - Compose Shipping Structure
  - Delete

## Cancel originating order lines

An order line cannot be canceled if the **Allow Changes to Shipment** box is selected for the linked shipment. To cancel the order line, clear the **Allow Changes to Shipment** check box for the shipment.

**Note**

This check box is available if the **EDI Status** is set to **Canceled**.

This check box is cleared and unavailable in these cases:

- The shipment status is either of these:
  - **Frozen**
    When a shipment is frozen, the **Allow Changes to Shipment** check box is cleared. If the user reopens the shipment, the **Allow Changes to Shipment** check box is automatically selected. This is done because a frozen shipment is reopened to implement changes to the shipment.
  - **Confirmed**, unless the **Allow Changes to Confirmed Load/Shipments** check box is selected in the Inventory Handling Parameters (whinh0100m000) session for confirmed shipments.
- The shipment is submitted for *acceptance (p. 129)* or source accepted.
- The **Single Line per Shipment** check box in the current session is selected.

# To modify shipment data

LN allows you to modify the warehouse shipment data and the load data on the open shipments.

You can modify these fields:

- **Ship-to Address**
- **Delivery Point**
- **Point of Title Passage**
- **Delivery Terms**

LN allows you to modify the data only if the **Ship-To Type** field is set to **Business Partner** and the shipment **Status** is **Open**. If the shipment line is frozen, you cannot change the data on the shipment line. To modify the data, you must unfreeze the shipment line. In case shipment documents are already printed, LN resets the print status of the shipment documents from 'Printed' to 'To be printed'. The documents must be re-printed.

### Modify the **Ship-to Address**

- LN allows you to change the **Ship-to Address** field on the shipment header.

- If there are multiple shipments for a load with different routes, LN does not allow you to modify the shipment data. However, LN allows you to move the shipment to a new load and modify the **Ship-to Address**. LN modifies the **Ship-to Address** of the shipment line.

**The consequences of changing the Ship-to Address**

- The value in the **Delivery Point** field on the shipment header and the shipment line, if specified, can also be modified. Specifying the **Delivery Point** is not mandatory.
- The value in the **Route** can also be modified on the shipment header. If there is a single shipment within the same load, the **Route** is automatically updated. In case of multiple shipments within the same load with different routes, the update is not allowed.
- When the taxation regime changes, LN does not allow you to modify the **Ship-to Address**.
- The **Delivery Note** linked to a shipment can also be modified. When only one shipment is linked to the load, LN allows you to modify the **Delivery Note** linked to the shipment with the modified **Ship-to Address**. If the **Delivery Note** is linked to multiple shipments with different ship-to addresses, LN removes the modified shipment from the existing delivery note and links it to a new delivery note. You must also reprint the existing delivery note after you remove the shipment, only if the delivery note is already printed.

### Modify the **Delivery Point**

- LN allows you to modify the **Delivery Point** that is part of the **Ship-to Address** on the shipment header. When the **Single Delivery Point per Shipment** check box is selected in the Shipments (whinh4130m000) session, the change in the **Delivery Point** on the shipment header is applicable to the shipment lines as well.
- However, when the shipment building criteria **Single Delivery Point per Shipment** is not selected, you can modify the **Delivery Point** but the changes are not applicable to the shipment lines.

### Modify the **Delivery Terms**

LN allows you to modify the **Delivery Terms** on the shipment header. When the **Delivery Terms** is modified, LN changes the value in the **Delivery Note** field.

If the modified shipment is the only shipment linked to the delivery note, the delivery note is modified as well. In case of multiple shipments, if the **Delivery Note** with different delivery terms is linked to multiple shipments, LN removes the modified shipment from the existing delivery note and links it to a new delivery note.

# Move a shipment to another load - delivery notes

If a shipment is moved to another load, LN checks if the shipment data matches the delivery note data of a shipment present on the load. If yes, the shipment is allocated to that delivery note. If not, a delivery note is created for the shipment that is moved.

# Partial shipments

If the quantity on the outbound order line is partially shipped and all shipment lines are confirmed, the outbound order line receives the **Shipped** status. In that case, you cannot ship the remaining quantity of the outbound order line, except for order lines of the following origins:

- **Sales**
  You can ship the remaining quantity by means of a back order
- **Sales Schedule**
  If you do not ship the total outbound order line quantity, LN generates a new outbound order line for the remaining quantity. The new outbound order line's status is **Open**. If problems occur, or no shipments are required anymore based on the newly generated outbound order line, the original sales schedule can block, delete, or cancel the outbound order line if the status is **Open**.
- **JSC Production**
  If you do not ship the total outbound order line quantity, LN generates a new outbound order line for the quantity that is not shipped. The new outbound order line's status is **Open**.
- **Service**
  If you do not ship the total outbound order line quantity, LN generates a new outbound order line for the quantity that is not shipped. The new outbound order line's status is **Open**.

# Not-shipped quantities

You can set goods to not shipped, for example, because the loading capacity of the truck is insufficient.

Adjusting quantities is allowed if the shipment line status is **Open**.

If a not-shipped quantity exists, you can do either of the following:

- Create an automatic adjustment for the difference by selecting the **Automatic Adjustment of Quantity Not Shipped** check box in the Shipment Lines (whinh4131m000) session. If you select this check box, you must also specify a reason in the **Reason** field.

  LN makes the adjustment if you confirm the shipment line.
- Specify a transfer order to return the goods that were not shipped to the storage location:
  1. On the appropriate menu, select **Return not Shipped Goods**--> **Not Shipped Goods** to open the Return not Shipped Goods (whinh4231m500) session.
  2. In the Return not Shipped Goods (whinh4231m500) session, specify the details of the transfer order.

If you confirm a shipment line with a not-shipped quantity, LN:

- Decreases the outbound order line's **Expected Not Shipped Quantity** with the shipment line's **Not Shipped Quantity in Inventory Unit**.

- Increases the outbound order line's not-shipped quantity with the shipment line's **Not Shipped Quantity in Inventory Unit**.

# To freeze projected shipments

To prevent shipments with status **Projected** from being changed or deleted, you can freeze these shipments. This is done by clearing the **Allow Changes to Shipment** check box in the Shipments (whinh4130m000) session.

This is similar to freezing shipments with status **Open**, but when freezing **Projected** shipments:

- You cannot print the shipping documents.
- Various checks that validate the shipment contents are not performed.

The Freeze option is only available for shipments with status **Open**.

## Projected shipments

If the use of projected shipments is implemented, projected shipments are created when the outbound order lines are created for a warehousing order. The purpose of creating shipments at this early stage in the outbound process is to prepare labeling and to publish the shipments before the goods to be shipped reach the staging area, which enhances the efficiency and cost-effectiveness of the process.

If the projected shipments are changed or removed, new labels must be created and new shipment Business Object Document (BODs) must be published. A projected shipment is deleted when changes, such as increasing or decreasing the order quantity, are made to the originating outbound order line.

## Modifying projected shipments

To prevent such changes from being made to projected shipments or the originating outbound order lines, freeze the projected shipments by clearing the **Allow Changes to Shipment** check box in the Shipments (whinh4130m000) session. Consequently, adding or removing shipment lines either manually or automatically is not allowed.

For example, when creating shipment lines for a new outbound order line, the application cannot add these shipment lines to frozen projected shipments. To enable shipment composition for these shipments, you must first select the **Allow Changes to Shipment** check box.

## Picking projected shipments

After the quantities of the projected shipments are picked and the shipment status is changed to **Open**, the setting of the **Allow Changes to Shipment** check box is not changed.

## Freeze and reopen shipments

When a shipment is frozen, the **Allow Changes to Shipment** check box is cleared. If the user reopens the shipment, the **Allow Changes to Shipment** check box is automatically selected. This is done because a frozen shipment is reopened to implement changes to the shipment.

## Cancel originating order lines

An order line cannot be canceled if the **Allow Changes to Shipment** box is selected for the linked shipment. To cancel the order line, clear the **Allow Changes to Shipment** check box for the shipment.

# Chapter 10
# Multiwarehouse Shipments

10

## Multiwarehouse shipments

The **Shipment through Warehouse** field in the Warehouses (whwmd2500m000) session is used to:

- Consolidate shipment lines containing goods from specific warehouses into one shipment
- Define the warehouse from which the actual shipping takes place

This is option is used in either of these cases:

- The travelling distance and logistic handling time between a group of warehouses is negligible.
- Multiple warehouses exist for administrative reasons, whereas there is only one actual warehouse from which shipping takes place.

In this way, you can skip specifying transfer orders to register inventory movements from the storage warehouses to the ship-from warehouse.

In the **Shipment through Warehouse** field of the Warehouses (whwmd2500m000) session, the main warehouse is specified for each warehouse that shares this warehouse as ship-from warehouse.

### Example

Warehouses WH001, WH002 and WH003 are located on the same premises. For easy administration, shipping is done from WH003. For WH001 and WH002, specify WH003 as the main warehouse in the **Shipment through Warehouse** field of the Warehouses (whwmd2500m000) session.

As a result, shipment lines that contain goods from warehouses WH001, WH002, and WH003 are combined in one shipment. WH003 is the main warehouse, from which shipping is done. WH001 and WH002 are the subwarehouses.

In the Shipments (whinh4130m000) session, the ship-from type and ship-from code of the shipment display WH003. On the shipment lines, the **Warehouse** field displays WH001 and WH002.

To prevent unwieldy clusters of main and subwarehouses:

- In the **Shipment through Warehouse** field of the Warehouses (whwmd2500m000) session, subwarehouses are unavailable.

  For example, WH003 is a subwarehouse of WH055. Therefore, you cannot select WH003 as the main warehouse for WH001 and WH002.
- For a warehouse that is selected as the main warehouse for one or more subwarehouses, the **Shipment through Warehouse** field is unavailable.

**Note**

- This functionality is unavailable for WMS controlled warehouses.
- This functionality is only available for warehouses of type **Normal**.
- The application allows you to select subwarehouses regardless of the distances defined between these warehouses and the main warehouse. Therefore, ensure that you select the correct warehouses.
- Transfer orders between two subwarehouses or between a sub and main warehouse are handled normal transfer orders. For transfers between two subwarehouses, the main warehouse is not involved. For transfers between a sub and a main warehouse, the main warehouse is either the receiving warehouse or the issuing warehouse.
- Consolidation of shipment lines from multiple warehouses into one shipment is used for logistic and transport planning purposes. This has no impact on consolidation of multiple shipments in export or customs related documents.
- Inventory from different warehouses cannot be consolidated into one shipment line.

# Multi warehouse shipment - shipment building

When the shipment procedure is launched for picked or released goods from a subwarehouse, the shipments are built according to the properties and settings of the main warehouse. subwarehouses

These fields from the Warehouses (whwmd2500m000) session impact shipment building and transport planning:

- **Generate Shipments**
- **Time Interval**
- **Minimum Shipment Interval Unit**
- **Maximum Shipment Interval**
- **Maximum Shipment Interval Unit**
- **Add Orders Based On**
- **Update Shipping Material Account during**
- **Delivery Note**
- **Reset Delivery Note Number**

For subwarehouses, the values of these fields are taken from the main warehouse. Therefore, in the Warehouses (whwmd2500m000) session, these fields are unavailable for subwarehouses.

## Warehouse locations

If location control applies, the application does not use the staging locations of the subwarehouses when building shipments.

## Handling units

Handling units are consolidated if the package definitions and handling unit templates match of the main warehouse match those of the subwarehouses.

A handling unit present for a shipment can be a multiwarehouse handling unit if the items of the shipment lines originate from different warehouses that share the same main warehouse. For more information, refer to the Multiwarehouse shipment example. Each bottom-level handling unit can contain items from a different shipment line.

## Shipping documents

If used in the shipment procedure, the shipping documents list the ship-from address or ship-from code of the main warehouse.

## Delivery date, distance, and lead time calculation

During the entry of, for example, a sales order, the calculation of the planned delivery date is based on the warehouse specified on the sales order. This is the warehouse in which the sold goods are stored. This can be a sub or a main warehouse. The delivery dates are based on the lead times specified for the warehouse and the distance between the warehouse and the business partner.

During shipment building, after the goods are picked, the application calculates the delivery dates of the main warehouse. These delivery dates are based on the lead times of the main warehouse and the distance between the main warehouse and the business partner.

## Quantities not shipped

Unshipped quantities can be returned from the staging location of the main warehouse to the bulk location of the subwarehouse from which the quantities were issued through a transfer order.

Transfer orders between two subwarehouses are not handled through the main warehouse.

## Move shipment lines to shipment

If the application does not combine some of the shipment lines into the shipment, you can move the shipment line to the shipment as long as the ship-from code and ship-from addresses of the shipment lines match those of the shipment. This applies to both Warehousing and Freight.

## Freight

To support consolidation of shipment lines containing goods from different warehouses into one shipment, you must link the main and subwarehouses involved to a shipping office and the planning groups of the shipping office. Warehouses are linked to shipping offices and planning groups in the Shipping Office (fmfmd0680m000) session. Consequently, the main warehouse is used as the source of the ship-from information of the freight orders and freight order lines, which in turn are used as input for loads and shipments.

If the multiwarehouse shipments functionality is supported, the application inserts the address and the ID of the main warehouse in the ship-from address and ship-from code fields of the freight order. The freight order lines and the shipment lines display the warehouse from which the items originate. If the multiwarehouse shipments functionality is supported, this is a subwarehouse.

# Chapter 11
# Delivery and Receipt Dates

11

## Calculate planned receipt and delivery dates

In the Warehousing Orders (whinh2100m000) and Shipment (whinh4630m000) sessions, you can use the **Calculate Delivery Date** and **Calculate Receipt Date** commands to calculate the delivery and receipt dates for a warehousing order or a shipment.

### Calculate planned delivery dates

If LN determines the planned delivery date and the lead times are expressed in hours, LN takes into account all the time that is available on a day according to the actual calendar. However, if the lead times are expressed in days, LN considers a day as a whole day if the actual calendar indicates that time is available on that day.

### Example 1

System date/time (= order creation date/time): Wednesday 7:00:00.

Outbound lead time: two hours.

The actual calendar is available from Monday through Friday each week, and has an 8:00:00 start time and an 18:00:00 end time.

According to the actual calendar, a calendar correction must be added: the actual time to which the outbound lead time will be added is Wednesday 8:00:00. Consequently, the default planned delivery date is Wednesday 10:00:00.

### Example 2

System date/time (= order creation date/time): Wednesday 17:45:00.

Outbound lead time: one day.

The actual calendar is available from Monday through Friday each week, and has an 8:00:00 start time and an 18:00:00 end time.

According to the actual calendar, no calendar correction is added. If, according to the actual calendar, some time is available on a day, the day is considered as a whole day. Consequently, Wednesday is considered a whole day because 15 minutes are left. The default planned delivery date is the start time of (in this example) the next day, Thursday 8:00:00.

**Note**

Select **Calculate** to get a planned delivery date that is based on the planned receipt date. You can, for example, use this option if you only know the planned receipt date.

## Calculate planned receipt dates

The default planned receipt date is calculated as follows:

```
planned receipt date = PDD + TT + CC
```

**Legend**

**PDD** Planned delivery date
**TT** Transport time
**CC** Calendar correction (ship-to)

LN does not take into account the transport time if the warehousing order originates from a production order.

If LN determines the planned receipt date and the lead times are expressed in hours, LN takes into account all the time that is available on a day according to the actual calendar. However, if the lead times are expressed in days, LN considers a day as a whole day if the actual calendar indicates that time is available on that day.

## Example 1: lead times in hours

Planned delivery date: Wednesday 10:00:00

Transport time: eight hours

The carrier's actual calendar has a 7:00:00 start time and a 17:00:00 end time. The ship-to's actual calendar has an 8:30:00 start time and an 18:00:00 end time. Both actual calendars are available from Monday through Friday each week.

The carrier will carry the goods for seven hours on Wednesday (from 10:00:00 until 17:00:00) and for 1 hour on Thursday (from 7:00:00 till 8:00:00). Therefore, according to the carrier's calendar, the planned receipt date is Thursday 8:00:00. However, if you also take into account the ship-to's actual calendar, the default planned receipt date is Thursday 8:30:00.

## Example 2: lead times in days

Planned delivery date: Wednesday 16:00:00

Transport time: two days

The carrier's actual calendar has a 7:00:00 start time and a 17:00:00 end time. The ship-to's actual calendar has an 8:30:00 start time and an 18:00:00 end time. Both actual calendars are available from Monday through Friday each week.

If the actual calendar indicates that time is available on a day, the day is considered a whole day. Consequently, Wednesday is considered a whole day according to the carrier's actual calendar because one hour remains. The transport will thus take place on Wednesday and Thursday. The default planned receipt date is Friday 7:00:00 according to the carrier's actual calendar. However, also taking into account the ship-to's actual calendar, the default planned receipt date is Friday 8:30:00.

**Note**

- Choose **Calculate** to get a planned receipt date that is based on the planned delivery date. You can, for example, use this option if you only know the planned delivery date.
- For transfer orders, you can change the planned receipt date until the moment a receipt line is created for an inbound order line of the transfer order. The changed planned receipt date is also displayed on the inbound and outbound order lines of the transfer order, with the exception of shipped outbound order lines.

## Freight Management

If Freight is implemented, the Freight load building engine uses the route plans, standard routes, and address lead times defined for the loading and unloading addresses to calculate the loading and unloading dates.

# Calculate loading and unloading dates

In the Planned Loads/Shipments (whinh4180m000) session, you can use the **Calculate** commands to calculate the loading and unloading dates for a planned load or shipment.

## Calculate loading dates

If LN determines the loading date and the lead times are expressed in hours, LN takes into account all the time that is available on a day according to the actual calendar. However, if the lead times are expressed in days, LN considers a day as a whole day if the actual calendar indicates that time is available on that day.

Consider the following example, in which the lead times are expressed in hours:

System date/time (= order creation date and time): Wednesday 7:00:00.

Outbound lead time: two hours.

The actual calendar is available from Monday through Friday each week, and has an 8:00:00 start time and an 18:00:00 end time.

According to the actual calendar, a calendar correction must be added: the actual time to which the outbound lead time will be added is Wednesday 8:00:00. So, the loading date is Wednesday 10:00:00.

In the following example, the lead times are expressed in days:

System date/time (= order creation date and time): Wednesday 17:45:00.

Outbound lead time: one day.

The actual calendar is available from Monday through Friday each week, and has an 8:00:00 start time and an 18:00:00 end time.

According to the actual calendar, no calendar correction is added. If, according to the actual calendar, some time is available on a day, the day is considered as a whole day. Consequently, Wednesday is considered a whole day because 15 minutes are left. The loading date is the start time of (in this example) the next day, Thursday 8:00:00.

## Calculate unloading dates

The unloading date is calculated as follows:

```
Unloading date = PDD + TT + CC
```

**Legend**

**PDD** Planned delivery date
**TT** Transport time
**CC** Calendar correction (ship-to)

LN does not take into account the transport time if the warehousing order originates from a production order.

If LN determines the unloading date and the lead times are expressed in hours, LN takes into account all the time that is available on a day according to the actual calendar. However, if the lead times are expressed in days, LN considers a day as a whole day if the actual calendar indicates that time is available on that day.

Consider the following example:

Planned delivery date: Wednesday 10:00:00

Transport time: eight hours

The carrier's actual calendar has a 7:00:00 start time and a 17:00:00 end time. The ship-to's actual calendar has an 8:30:00 start time and an 18:00:00 end time. Both actual calendars are available from Monday through Friday each week.

The carrier will carry the goods for seven hours on Wednesday (from 10:00:00 until 17:00:00) and for 1 hour on Thursday (from 7:00:00 till 8:00:00). So, according to the carrier's calendar, the planned receipt date is Thursday 8:00:00. However, if you also take into account the ship-to's actual calendar, the default planned receipt date is Thursday 8:30:00.

**Note**

This formula is also used to calculate the planned receipt and delivery dates by means of the **Calculate Delivery Date** and **Calculate Receipt Date** commands in the Warehousing Orders (whinh2100m000) session. In the Warehousing Orders (whinh2100m000) session, the unloading date is the receipt date and the loading date is the delivery date.

### Freight Management

If Freight is implemented, the Freight load building engine uses the route plans, standard routes, and address lead times defined for the loading and unloading addresses to calculate the loading and unloading dates.

## Determination of lead time

When LN determines the default planned delivery date in the Warehousing Orders (whinh2100m000) session, LN also takes into account the lead time. The lead time is determined as follows:

- If the **Ship-from Code** is a business partner and the item is specified, LN retrieves the business partner's internal lead time from the **Supply Time** field and the lead time unit from the **Unit for Supply Time** field of the Items - Purchase (tdipu0101m000) session.
- In all other cases, LN retrieves default lead times from the Item Data by Warehouse (whwmd2510m000) session, and lead times for items-by-warehouse from the Warehouses (whwmd2500m000) session.

## Determination of transport time

If you enter a warehousing order in the Warehousing Orders (whinh2100m000) session, LN takes into account the transport time required to:

- Determine the default planned receipt date.
- Calculate the planned delivery date based on the planned receipt date.
- Calculate the planned receipt date based on the planned delivery date.

LN determines the transport time between the ship-from's address and the ship-to's address, based on a relevant distance table (if available) in the Distance Table by City (tccom4137s000) session or in the Distance Table by ZIP Code/Postal Code (tccom4138s000) session. From which of these two sessions

the transport time is retrieved depends on the value of the **Usage Distance Tables** field in the COM Parameters (tccom0000s000) session.

When LN determines the transport time, LN also takes into account the calendar of the carrier that is specified for the current warehousing order. The calendar of the carrier is the calendar of the buy-from business partner that is linked to the carrier in the Carriers/LSP (tcmcs0580m000) session.

LN determines the calendar correction for the transport time based on the start time and end time of the carrier's actual calendar.

**Note**

If Freight is implemented, Freight calculates the transport time.

# Determination of calendar correction

When LN determines the planned delivery date and the planned receipt date in the Warehousing Orders (whinh2100m000) session, LN takes into account the calendars of the ship-from data and the ship-to data to determine the required calendar correction. LN determines the calendar correction for ship-from data and ship-to data in the same way. The calendar correction determination only differs in the following way:

- If the calendar correction must be determined for the ship-from data, LN uses the **Ship-from Code**.
- If the calendar correction must be determined for the ship-to data, LN uses the **Ship-to Code**.

To be able to add a calendar correction, LN searches for a calendar as follows:

1. If the **Ship-from Code** or the **Ship-to Code** is a warehouse, LN searches for a calendar in the following sequence: the address' calendar, then the warehouse's calendar, and then the company's calendar. In all other cases, LN uses the address' calendar. If LN cannot find any calendar, a calendar correction does not take place.
2. If a calendar is found, LN searches for the actual calendar based on:
   - The found calendar.
   - The availability type.
   - The calendar's start date and end date.
3. LN determines the calendar correction based on the actual calendar's start time and end time.

**Note**

- You can view the actual calendar in the Calendar Working Hours (tcccp0120m000) session.
- You can define the availability type in the Warehouse Master Data Parameters (whwmd0100s000) session.

# Chapter 12
# Shipping structure

12

## Shipping structures

### Single order settings

In addition to the standard requirements described in *Conditions for shipment composition (p. 73)* and *Shipments and loads (p. 66)*, the following warehouse order type settings determine how shipment lines, shipments, and, if implemented, shipping containers, are structured to form loads:

- **Single Order Set per Shipment**
- **Single Order per Load**
- **Single Order per Shipment**

#### Create shipment line

When a shipment line is created for a warehousing order and **Single Order Set per Shipment** or **Single Order per Shipment** is selected for the order type of the warehousing order, the shipment line is linked to an existing shipment if the shipment is linked to the same warehousing order ( **Single Order per Shipment** selected) or order set (if **Single Order Set per Shipment** is selected). If no such shipment is present, a new shipment is created. If **Single Order per Load** is selected, a new load is created if no matching load is present.

Shipment lines are generated during the outbound procedure or manually created. For more information, refer to *The outbound procedure (p. 23)* and *Manually created shipments (p. 71)*.

#### Move shipment line

If a shipment line refers to a warehousing order with order type setting **Single Order per Shipment** or **Single Order Set per Shipment**, you can only move the shipment line to a shipment that refers to the same warehousing order or order set, respectively. You can also move a shipment line to a shipping container and load if the shipment of the shipment line and the destination load and shipping container belong to the same warehousing order.

You can move shipment lines in the Compose Shipping Structure graphical user interface or the Compose Shipment (whinh4231m000) session.

### Move shipment

To move a shipment to a load created for a warehousing order with order type setting **Single Order per Load**, the shipment must belong to the same warehousing order.

You can move shipments in the Compose Shipping Structure graphical user interface or the Compose Load (whinh4134m000) session.

### To compose shipping containers

You can move shipments from one shipping containers to the next within the same load if the status of the shipments and the shipping containers is **Open**.

If a shipment for which the shipping manifest is printed is moved to another shipping container, a new shipping manifest must be printed after the shipment is moved. If a shipment is added to a shipping container for which the shipping manifest is printed, the shipping manifest must be printed again.

If a shipment with a handling unit is moved to a shipping container with a handling unit, the handling unit of the shipment is unlinked from the handling unit of the source container and linked to the handling unit of the destination shipping container. In addition, the gross weights and the net weights of the shipping containers is recalculated. You can use the Compose Shipping Structure graphical user interface to compose shipping containers.

# Compose Shipping Structure - Container Handling

This topic describes whether containers, if applicable, must be created manually or whether LN generates the first container automatically. The following **Container Handling** options are available:

- **Manual**
- **Automatic**
- **Not Applicable**

The shipping container indicates how the shipments are packed for transportation. Multiple containers can be linked to a load. Multiple shipments, (for different ship-to codes) can be linked to one shipping container.

## Manual

The creation of shipping containers and the assignment of shipments to shipping containers is a fully manual process. When LN creates a shipping structure, by default all the shipments are added to the node *Without Containers* in the Compose Shipping Structure graphical browser framework (GBF). You must manually create shipping containers and move the shipments from *Without Containers* to these newly created shipping container.

**Note**

The **Manual** option is not applicable for the following **Inventory Transaction Type**:

- **Receipt**
- **WIP Transfer**

## Automatic

The **Automatic** option indicates that LN generates a first shipping container and assigns the shipments to this shipping container automatically. LN automatically generates a shipping container during load/shipment building and links this container to the load/shipments.

**Note**

The **Automatic** option is not applicable for the following **Inventory Transaction Type**:

- **Receipt**
- **WIP Transfer**

## Not Applicable

The **Not Applicable** option indicates that the concept of shipping containers is not in use. LN does not generate shipping containers. If the option is **Not Applicable**, you cannot create shipping containers even manually.

**Note**

The **Not Applicable** option is not applicable for the following **Inventory Transaction Type**:

- **Issue**
- **Transfer**

# (Automatic) Linking of Shipments to Containers

### Example

The following example scenarios describe how shipments are linked to shipping containers and how shipping containers are created in case no container is available:

- *Scenario 1: Load status = Open*

  The number of containers with status Open = one: New shipments must be linked to that container.

  **Example**
  - Container 1 with status = Confirmed
  - Container 2 with status = Confirmed

- Container 3 with status = Frozen
- Container 4 with status = Open

In this case, new shipments are linked to the container with status Open.

- *Scenario 2: Load status = Open*

  The number of containers with status Open = two : New shipments must be linked to node "Without Containers."

  **Example :**
  - Container 1 with status = Confirmed
  - Container 2 with status = Confirmed
  - Container 3 with status = Open
  - Container 4 with status = Open

  In this case, new shipments are linked to node "Without Containers" to let the user decide which container must be used.

- *Scenario 3: Load Status = Open*

  The number of containers with status Open = Zero.

  In this case, a new container is generated and the new shipments are linked to this new container.

- *Scenario 4: Load status = Frozen/Confirmed.*

  In this case, a new load and container are generated and the new shipments are linked to this new container.

# Shipping constraints

LN records the shipping constraints on the warehouse order header and the outbound order lines. If a shipping constraint is defined at header level of a manual warehouse order, the shipping constraint is defaulted to all the outbound order lines. For warehouse orders of the origin sales order or sales schedule, the shipping constraint is retrieved from Sales. For all other non-manual origins, the shipping constraints are defaulted as **None**, which means that the shipping constraints can be defined manually on the warehousing order.

## Warehouse order header

You can specify these shipping constraints for the warehouse order header:

- **None**

  No shipping constraint applies. LN handles the orders based on the available inventory. Sufficient inventory results in a complete shipment.

In case of insufficient inventory, and:

- If the **Use Contracts for Schedules** check box is selected in the Sales Schedule Parameters (tdsls0100s500) session, the back orders are not created automatically in case of partial shipment. In this situation, LN communicates the shipped quantity back to the sales schedule and, based on the shipping details, the user decides on how to deal with the short-shipped quantity. LN clears the **Create Backorders** check box in the Outbound Order Lines (whinh2120m000) session.

  This process applies only for the sales schedules which are created if the **Use Contracts for Schedules** check box is selected.

- If contracts are not used for sales schedules, LN automatically creates a backorder in case of a partial shipment. LN selects the **Create Backorders** check box in the Outbound Order Lines (whinh2120m000) session.

- **Ship Order Complete**
  The total order must be shipped in a single shipment. Therefore, LN does not allow partial deliveries. The lack of inventory results in the postponement of the shipment .

- **Ship Set Complete**
  A warehouse order set is based on the sales order set, which is recorded on the Warehouse order header. More than one warehousing order set can belong to a sales order set. For the origin sales this constraint means that the complete sales order set must be shipped at once, which implies that the related warehouse order set(s) must be shipped completely.

- **Ship Kit Complete**
  This can be applied only for a kitting order and means that kits have to be shipped completely. It will be possible to ship less items than ordered but only when the related kit structures are complete with all their components. LN assigns a unique set number to the component lines that constitute a main item/kit, which must be shipped in one set.

**Note**

The **Ship Kit Complete** option is not applicable to:

- Warehouse orders that are created manually.
- Non-manual warehouse orders that have an origin other than sales order and sales schedules.

## Outbound order line

You can specify these shipping constraints for the outbound order lines:

- **None**
  No shipping constraint applies.

- **Ship Line Complete**
  The total quantity of the outbound order line must be shipped as a single shipment.

- **Ship Line & Cancel**

If sufficient inventory exists, this results in a complete shipment of the outbound order line. A lack of inventory does not result in a back order but in the cancellation of the order for the remaining quantity. LN links a predefined cancel reason to the order line.

# Chapter 13
# Costs

13

## Carrier selection and cost calculation in Warehousing

For business scenarios where freight costing and invoicing is based on the actual shipment built in Warehousing, LN allows you to calculate freight costs for the shipment and to select the best carrier and transport means group or transport means combination.

In these scenarios, the shipments are not created by in the Generate Plan (fmlbd0280m000) session in Freight, but by Warehousing. These shipments are the actual shipments issued from the warehouse. The warehouse shipments are passed on to the Freight package after the shipment is confirmed in Warehousing. After the warehouse shipments are received in Freight, the freight loads and shipments are created and the freight costs can be invoiced to the customers.

For details, refer to the online Help of

- The **Rate and Carrier/LSP Selection at Warehouse Shipment** field in the Freight Rates and Costs Parameters (fmfrc0100m000) session.
- The **Estimated Freight Costs**, Select Carrier/LSP, and Log Select Carrier/LSP fields in the Loads (whinh4140m000) session.

## Additional costs in Warehousing

LN allows you to add additional costs to shipments. You can use the following two types of items for adding additional costs to the shipments:

- Cost Items
- Service Items

**Note**

Warehousing calculates the additional costs for a shipment if:

- You set the **Calculate For** field to **Shipments** in the Sold-to Business Partner (tccom4110s000) session.
- At least one shipment line of origin sales order or sales schedule must be present in the shipment.

Additional cost lines can be attached to a shipment in the following two ways:

- Generate additional cost lines
- Manually insert the additional cost lines

## Generate Additional Cost Lines

Whether additional cost lines are generated depends on the setup of cost sets in Sales. Use the Sales Additional Cost Set (tdsls0624m000) session to define additional cost sets and to link cost items to a cost set. For more information, refer to Additional costs – setup.

LN determines the applicable cost items based on the total weight, value, or quantity of a shipment. The total weight, value, or quantity of a shipment includes all order lines on the shipment, also those from order origins other than sales orders and sales schedules. You can generate a specific cost line for Hazardous Material in case one or more items of the sales order or the shipment is marked as hazardous. To define an item as hazardous, you can select the **Hazardous Material** check box in the Items - Warehousing (whwmd4500m000) session. Furthermore, you must define a proper cost set with cost items in the session mentioned above.

The shipment-based and item-dependent additional costs are added to the shipments in Warehousing as separate shipment lines in the Shipment Lines (whinh4131m000) session the moment a shipment is confirmed. The additional shipment cost lines are initially generated in Warehousing and sent to Sales, where a cost order is generated for the shipment when the shipment is confirmed. You can add, change, and/or remove additional cost lines in the Shipment Lines (whinh4131m000) session before confirmation of the shipment.

If the **Interactive Adding of Additional Costs** check box is selected in the Sales Additional Cost Set Scenarios (tdsls0527m000) session, LN displays a question whether additional costs must be calculated or not. Otherwise, costs are added automatically. A third option is to manually retrieve additional costs through the **Calculate Additional Costs** command in the Shipments (whinh4130m000) session. This allows the user to modify these costs.

## Manual Insertion of additional cost lines

You can also manually add cost or service items on cost lines to a shipment. You can also specify the quantity and amount for manual cost lines. Manually inserted lines are not affected when additional cost lines are regenerated.

## Cost Item Amount

The amount of the cost items is retrieved from Pricing, or from the standard sales price. For more information, refer to Additional costs – setup. LN does not allow discounts for cost lines on the shipment. Generated cost lines only have an amount and no quantity. For manual cost lines, both the amount and quantity can be specified. The user is allowed to change or remove cost lines in interactive mode.

## Invoicing

In case one or more additional cost lines are present for the shipment, a sales cost order is generated when the shipment is confirmed in Warehousing, but only if the **Update Sales Deliveries** field is set to **Direct** in the Inventory Handling Parameters (whinh0100m000) session. Otherwise, LN adds the cost lines to the Deliveries (whinh4139m000) session. In that case, the user processes the deliveries and the additional cost lines create a cost order in Sales. The cost order is released to Invoicing together with the delivered sales order lines. When the invoice is composed for a shipment in Invoicing, LN updates the invoice number and invoice date on the warehouse shipment order.

## Printing Shipping Documents

You can print the following shipping documents:

- **Print Cost/Service Item on Shipping Manifest**
- **Print Cost/Service Item on Packing Slip**
- **Print Cost/Service Item on Goods Received Notes**
- **Print Cost/Service Item on Delivery Note**

# Chapter 14
# Shipping Documents

14

## Shipping documents

The shipping documents are printed along with the shipment that list the consignment related information. The shipping documents are printed as part of the shipment procedure. The shipment procedure determines which shipping documents must be printed. The shipping documents are:

- packing slip
- packing list
- shipping manifest
- bill of lading
- delivery note

# Chapter 15
# Packaging and Delivery

15

This chapter discusses packaging and shipment processes mainly based on handling units. While briefly addressed in this chapter, a detailed discussion of packaging definitions and handling unit templates is outside the scope of this chapter. For more information about package definitions and handling unit templates, please refer to *LN Warehousing User Guide for Handling Units (U8938)*.

## Packaging and shipment processes for outbound handling units

Industries require various packaging and shipment processes for efficient delivery of products.

To enhance the packaging and shipment processes, you can use these features:

- Fill up handling units
- *Full packaging of material (p. 118)*
- *Packaging reference distribution (p. 119)*
- Shipping sequence
- Consolidate stock point details

### Fill up handling units

Handling units can be filled up and shipment lines can be consolidated based on the **Consolidate Stock Points in one Shipment Line** parameter in the Inventory Handling Parameters (whinh0100m000) session.

The prerequisites to fill up handling units within the same handling unit structure:

- The package definition code of the shipment line must be identical to the package definition of the picked goods.
  Templates are also compared when dealing with the multi-item structure:
  - The number of nodes must be the same.
  - The quantity of packaging items must be the same.
  - The auxiliary packaging must be identical.

    - The quantity of the auxiliary packaging must be the same.
- The handling units must not be in stock, but they must be generated during the confirm pick process. When the handling units are picked from stock, the **Shipment** on the picking list is filled. In this situation, the picking list is closed and the contents are transferred to the **To Shipment Handling Unit**.
- If used, the single packaging references must match the handling unit template.
- When filling up, the item that is put in the single handling units must match the picked item.
- Goods picked and placed within the same shipment are filled up in the handling unit structure, if possible.

## Fill-up conditions

When starting the shipment building process, LN checks for existing shipment lines that can be used to ship the goods. When handling units are generated during picking, and the picked goods have no handling unit yet, the package definition of the outbound order line is used. When the package definition is filled, LN searches for existing shipment lines with the same package definition with related handling unit, based on this package definition. When no package definition is defined for the outbound order line, the shipment building process searches for shipment lines without a package definition. When handling units are generated during picking, shipment lines with a related handling unit are also selected and filled up accordingly.

When a shipment line that can be used for the picked goods is identified, these actions are executed:

- Validate current handling unit structure against the package definition. If the validation fails, a new handling unit structure is created for the picked goods. This happens only when all the shipment line related handling units have the **Status** set to **Staged**. In case there are handling units with the **Status** set to **Open**, the fill-up is performed without the validation.
- Add the picked goods to the singles that are not full yet, so contents are added to existing handling units. Related constraints:
    - The item of the single handling unit must be the same as the picked item.
    - Reference, Packaging Reference A and Packaging Reference B must be identical.
- Add packages on the master handling unit(s) if there is still space available on the master handling unit.

    **Constraints for single item:**
    - The reference of the master handling unit must match the picked reference when for the master, the **Single Reference** check box is selected in the Handling Units (whwmd5130m000) session.
    - The Packaging Reference A of the master handling unit must match picked packaging reference A when for the master, the **Single Packaging Reference A** check box is selected in the Handling Units (whwmd5130m000) session.
    - The Packaging Reference B of the master handling unit must match picked packaging reference A when for the master, the **Single Packaging Reference B** check box is selected in the Handling Units (whwmd5130m000) session.

**Constraints for multi-item:**

- The **Allow Multi Item for Shipping** check box in the Handling Unit Templates (whwmd4160m000) session must be selected for the handling unit template of the outbound order line that is related to the picking list that is just picked.
- The handling unit templates must match (except for the contents within the packaging item) the packaging items.
- The Reference of the master handling unit must match the picked reference when the **Single Reference** indicator is selected on the master.
- The **Packaging Reference A** of the master handling unit must match the picked packaging reference A when the **Single Packaging Reference A** check box is selected on the master.
- The **Packaging Reference B** of the master handling unit must match the picked packaging reference A when the **Single Packaging Reference B** check box is selected on the master.

- Add new master handling unit when the contents cannot be added to the existing masters or the single reference constraints do not match, and there are goods that still require packing.

## Validate packaging reference distribution/CINDI

In order to prevent the shipping of incorrect structures, a validation of the structure must be performed before the confirmation of the shipment. For the shipment line that is to be confirmed/frozen, the packaging reference distribution is validated against the handling unit structure. For more information on CINDI, see *CINDI process (p. 126)*.

## Compose handling Unit

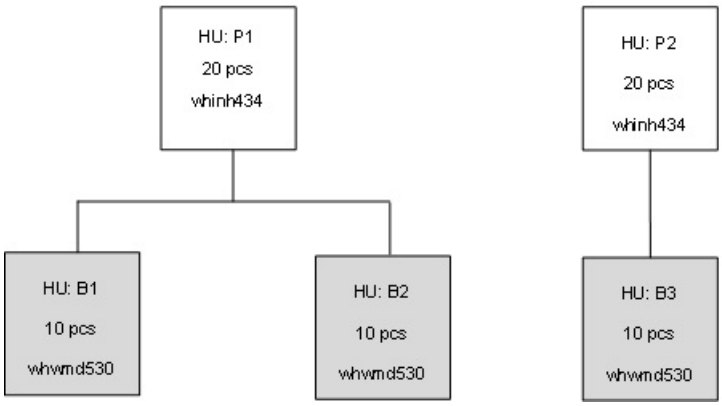
When handling units are composed, additional checks must be executed with respect to the references. When moving handling units from one parent to another, LN considers the handling unit building constraints.

## Example

The handling unit is defined:

| Node | Packaging Item | Single Packaging Reference | Single Packaging Reference A | Single Packaging Reference B |
|---|---|---|---|---|
| 1 | Pallet | V | V | X |
| 2 | Box | V | V | V |

The handling unit structure is present:




For handling unit P1 these references are filled:

- Reference: REF001
- Reference A: REFA001
- Reference B: REFB001

For handling unit P2 these references are filled:

- Reference: REF001
- Reference A: REFB001
- Reference B: REFB001

When the user want to move the handling unit B2 from P1 to P2 the user will get an error message, because the reference A of the parent handling unit (pallet) are not matching. This table indicates when moving of complete boxes is allowed:

| Target (Pallet) / Source (box/crate) | | Pallet P1<br>Single Reference: V<br>Single Reference A: V<br>Single Reference B: V | | | Pallet P2<br>Single Reference: X<br>Single Reference A: V<br>Single Reference B: V | | | Pallet P3<br>Single Reference: V<br>Single Reference A: X<br>Single Reference B: X | | | Pallet P4<br>Single Reference: X<br>Single Reference A: X<br>Single Reference B: X | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ref<br>001 | Ref A<br>A01 | Ref B<br>B01 | Ref<br>001 | Ref A<br>A02 | Ref B<br>B02 | Ref<br>002 | Ref A<br>A01 | Ref B<br>B01 | Ref<br>002 | Ref A<br>A01 | Ref B<br>B01 |
| Reference<br>Reference A<br>Reference B | 001<br>A01<br>B01 | V | | | X | | | X | | | V | | |
| Reference<br>Reference A<br>Reference B | 001<br>A02<br>B01 | X | | | V | | | V | | | V | | |
| Reference<br>Reference A<br>Reference B | 002<br>A01<br>B01 | X | | | X | | | V | | | V | | |
| Reference<br>Reference A<br>Reference B<br><br>Reference<br>Reference A<br>Reference B | 001<br>A01<br>B02<br><br>002<br>A02<br>B02 | X<br><br>X | | | X<br><br>V | | | X<br><br>V | | | V<br><br>V | | |
| Reference<br>Reference A<br>Reference B | 003<br>A03<br>B03 | X | | | X | | | X | | | V | | |

## Compose shipment

When a shipment line is moved from one shipment to another, the shipment line reference distribution is also moved into the new shipment line. The reference distribution is copied or updated. The handling units must be filled-up manually by composing the handling unit structure.

## Split shipment line

When shipment lines are split, the packaging reference distribution is also split. When a handling unit is split from the shipment line, the handling unit reference fields are used to determine which part of the shipment line reference distribution must be copied.

However, when there are no handling units and there is a shipment line reference distribution present, the split off quantity inherits a part of the packaging reference distribution assigned. LN prioritizes the highest distribution line till the whole split quantity is assigned.

## Shipping documents

Generally, handling units are printed on shipping documents. When a multi-item handling unit structure is present for a shipment, the multi-item level is not printed.

# Full packaging of material

The material quantities and packaging method received by the car manufacturers. Car manufacturers frequently accept only full packaging material (crates, boxes, pallets and so on); this is applicable to all levels within a packaging structure or only to specific levels. In LN, this can be managed using **Full Packages Only** functionality at each packaging level in a handling unit structure.

The impact of the **Full Packages Only** functionality:

## Order entry

When the **Full Packages Only** functionality is implemented for a node/ level within the handling unit template related to a sales schedule, the planned warehouse order quantity becomes a multiple of the full package quantity. When the package definition is defined for the sales contract line logistic data, a relation can be established between the sales schedule and the handling unit template used. This enables the user to activate the **Full Packages Only** functionality for a sales schedule.

When a planned warehouse order is created for which the **Full Packages Only** check box is selected on the package definition or handling unit template, the order quantity may not necessarily be the sum of the linked sales schedule line or lines as the quantity can be adjusted to meet 'full packages only' criterion. The multiple of a packaging item quantity on an order is determined from the package definition and the item. For example:

| Node | Packaging Item | Packaging Item Quantity | Quantity in Storage Unit | Full Package Only |
|---|---|---|---|---|
| 1 | Pallet | 1 | 0 pcs | No |
| 2 | Box | 10 | 0 pcs | Yes |
| 3 | | | 100 | Yes |

In the example, order quantities must be a multiple of the packaging item quantity of 10 pcs (100pcs of node 3 packed in 10 boxes of node 2). The storage unit is the same as the inventory unit. In case the storage unit box is used, allows 4 pcs per box, this happens:

| Node | Packaging Item | Packaging Item Quantity | Quantity in Storage Unit | Full Package Only |
|---|---|---|---|---|
| 1 | Pallet | 1 | 0 pcs | No |
| 2 | Crate | 10 | 0 pcs | Yes |
| 3 | | | 40 box | Yes |

In the example, order quantities must be multiple of 16 pcs (40 box of node 3 packed in 10 crates of node 2) * 4 (conversion of pcs to box is 4).

## Outbound Processes

After the generation of the outbound advice for the outbound order line; the outbound advices can be modified manually. When an outbound advice is adjusted or a shortage has been identified, resulting in a quantity that is not a multiple of the full package quantity, a warning message is displayed, stating that the 'full packages only' criterion is not met. However, LN allows the user to continue the process.

The same principle is applicable in case of partial shipments. A deviation from the 'full packages only' criterion is allowed and semi-filled packages can be delivered. When the warning message is displayed during the generation of the outbound advice, the quantities can be changed to match the 'full packages only' criterion.

**Note**

LN does not perform the 'full packages only' check again during the confirmation of a shipment.

# Packaging reference distribution

When goods are picked and linked to a shipment, the packaging reference distribution is created or updated below the shipment line and is used when handling units are generated for a shipment line. This is applicable only for the shipment lines that are created for a sales schedule.

The distribution is created based on the outbound order line reference distribution. The following table describes these references:

| Reference | Description |
|---|---|

| Shipment Reference | Transport ID |
|---|---|
| Reference | In the automotive industry, master handling units must be shipped with the same Reference. The user is allowed to model the level of Single Reference in the handling unit template. |
| Packaging Reference A | In the automotive industry, whole master handling units must be shipped with the same Reference A. The user is allowed to model the level of Single Reference A in the handling unit template. |
| Packaging Reference B | In the automotive industry, single handling units must be shipped with the same Reference B. The user is allowed to model the level of Single Reference A in the handling unit template. |

# Shipping material accounts

The topic describes the packaging item registration functionality.

A shipping material account groups packaging items. Shipping material accounts are used to communicate with a business partner about quantities of packaging items and payments of packaging items.

**Note**

LN records the packaging item transactions only when the:

- **Extended Packaging Item Registration** check box is selected in the Warehouse Master Data Parameters (whwmd0100s000) session.
- **Accountable** check box is selected in the Packaging Items (whwmd4505m000) session.

**Important!**

You can copy all items from one business partner to another business partner within the same shipping material account.

## Search of shipping material accounts

When LN records a shipping material transaction, LN searches for a shipping material account (SMA) to be linked to the transaction in the following hierarchy :

1. LN searches for a SMA that has a combination of business partner, packaging item and transaction date of the transaction.

The step 1 can also result in an empty SMA. This means that the item is excluded from accounting for the specific business partner. If a SMA is found in step 1, then the search action stops, else step 2 is executed.

2. LN searches for a SMA that has a combination of business partner, and transaction date of the transaction.

In the steps above, LN searches for an entry in the shipping material account that has an effective date which is most close to the transaction date. Expiry date for the shipping material account are not defined. The expiry date of an existing entry in the shipping material account is determined by the effective date of a new entry in the accounting scheme.

## Packaging item registration

LN record the received and issued quantities of packaging items by date. LN updates the session during the receipt and shipping process for transactions that have a packaging item. Packaging item can be linked to a handling unit, receipt line, shipment or container. The Packaging Item Transactions (whinr1115m000) session is updated even if no shipping material account is used for packaging items.

You can also enter the packaging item transactions manually.

**Important!**

- Transfer orders and adjustment orders are not logged in the packaging item transactions as no business partner is related to these processes.
- Container related shipments for sales transfer orders are not logged, because no unique link can be determined between a container and the sales order.

For sales orders of type transfer, an exception is made to support a VMI scenario where goods flow through a *VMI warehouse*. The transfer sales orders are used for VMI scenario that deliver the goods from own warehouse to a *VMI warehouse* and after that the issue to the customer is carried out.

The business partner is determined at the original sales order. You can select the stage in the supply process at which the packaging item related transactions are updated by LN in the **Update Shipping Material Account during** field of Warehouses (whwmd2500m000) session (in case of a logistical service provider (LSP) scenario). The field is enabled only for VMI warehouses in which warehouse management is not carried out by own company.

The packaging item related transactions can be updated by LN at the following points in the supply process:

- **Shipment to VMI Warehouse**
  The shipping material account must be updated during shipment of (packaging) items from the normal warehouse to the VMI warehouse.
- **Consumption by Customer**
  The shipping material account must be updated during shipment of (packaging) items from the VMI warehouse (Logistical Service Provider (LSP) warehouse) to the customer/OEM (Original Equipment Manufacturer).

- **Not Applicable**
  LN assigns this value for warehouses in which the own company is doing inventory management. To record the packaging item transactions, you must select the **Extended Packaging Item Registration** check box in the Warehouse Master Data Parameters (whwmd0100s000) session.

**Limitations**

- Only logistic data is stored in the session. No financial data is stored. So invoicing is a manual action.
- Only receipts and shipments that are related to a business partner are updated in the packaging item transactions session. Also, the sessions that record related packaging item balances are updated only for business partner-related transactions. So warehouse transfer orders and inventory adjustments are not taken into account. For sales orders of type transfer, an exception is made to support a VMI scenario where goods flow through a *VMI warehouse*. For more information, refer to Logistic service providers (LSP) - packaging item registration.
- The logging of packaging item transactions at the moment of consumption by the customer is not based on consumed stock point information from the VMI / LSP warehouse. Packaging material transactions must be logged separately from the regular item consumptions and are processed during the processing of (sales) consumptions.

## Shipping material accounting scheme

LN link business partners and packaging items combinations to shipping material account (SMA). The business partner and item combination identify the shipping material account for a packaging item transaction. The Shipping Material Accounting Scheme (whwmd4171m000) session is used to find the correct shipping material account for a packaging item transactions.

The business partner and item link to shipping material account is based on effective dates. You can also specify a future effective date to make a new set of shipping material accounts available for the future. If you do not specify an item, it indicates that an SMA is linked to a BP for all items. If you do not specify a SMA , it indicates that an item is not accountable.

The following are the important characteristics of the shipping material accounting scheme:

- **Business Partner/Item**
  This is the most detailed level tracking of packaging item transactions. The accounts are defined for a business partner and a specific item.
- **Business Partner**
  This is a more global level which can be defined by keeping the item field empty. This level can be used in case you want to combine all items for a (group of) business partner(s) in one account.

When linking accounts to transactions, LN first tries to retrieve an account at the business partner/item combination level. If business partner/item combination account is not found, LN falls back to the more general business partner level and tries to find an account to link to the transaction.

In case shipping material accounting schemes are defined at business partner level, all items for a (group of) business partner(s) are linked to one account.

These options are available to exclude specific packaging items from detailed transaction logging:

- You can mark the item as not accountable. You must clear the **Accountable** check box for a item in the Packaging Items (whwmd4505m000) session. As a result, the item is not be available at all for shipping material accounting.
- You can define an entry in the shipping material accounting scheme in which you keep the **Shipping Material Account** field empty.
- You can define a dummy shipping material account and create entries for this dummy account in the shipping material accounting scheme.

When searching for a shipping material account (SMA) for a transaction, LN searches for an entry in the shipping material accounting scheme that has an effective date which is most close to the transaction date. Expiry dates are not defined. The expiry date of an existing entry in the shipping material accounting scheme is determined by the effective date of a new entry in the accounting scheme.

Multiple business partners can be linked to the same shipping material accounting scheme. The following sections describe the possible scenarios.

## Scenario 1: All packaging items linked to one SMA

This scenario can be achieved by defining an entry in the accounting scheme in which:

- You specify the business partner
- You do not specify the item

| Business Partner | Item | Effective Date | SMA |
|---|---|---|---|
| VW1 | | | SMA_VW_GLOBAL |
| VW2 | | | SMA_VW_GLOBAL |

## Scenario 2: All packaging items linked to one SMA , excluding specific items allowed.

In this scenario, all possible packaging items are linked to one SMA , with the possibility to exclude specific items for accounting.

You can achieve this scenario by defining an entry in the accounting scheme in which you specify the business partner and but do not specify the item. In addition to this, the user must define an entry in the

accounting scheme in which both the business partner and item are specified but the shipping material account is not specified.

| Business Partner | Item | Effective Date | SMA |
|---|---|---|---|
| VW1 | | | SMA_VW_GLOBAL |
| VW1 | Foil | | |
| VW2 | | | SMA_VW_GLOBAL |
| VW2 | Foil | | |

## Scenario 3: Linking a specified subset of the packaging items to a SMA

Only the selected items are linked to the SMA. You can achieve this scenario by defining a set of entries in the accounting scheme in which both the business partner and item are specified, one entry for every single item.

| Business Partner | Item | Effective Date | SMA |
|---|---|---|---|
| VW1 | KLT345 | | SMA_VW_SPEC |
| VW1 | KLT521 | | SMA_VW_SPEC |
| VW1 | KLT978 | | SMA_VW_SPEC |
| VW2 | KLT345 | | SMA_VW_SPEC |
| VW2 | KLT521 | | SMA_VW_SPEC |
| VW2 | KLT978 | | SMA_VW_SPEC |

## Scenario 4: Most packaging items linked to one account, some linked to other account

In this scenario, the majority of packaging items must be linked to one account, a small subset of the packaging items must be linked to a different account.

You can achieve this scenario by setting up two accounts. In the accounting scheme one entry is created in which the business partner is specified but the item is not specified. Other entries are created having both the item and business partner filled.

| Business Partner | Item | Effective Date | SMA |
|---|---|---|---|
| VW1 | | | SMA_VW_GLOBAL |
| VW1 | KLT345 | | SMA_VW_SPEC |
| VW1 | KLT521 | | SMA_VW_SPEC |
| VW1 | KLT978 | | SMA_VW_SPEC |
| VW2 | | | SMA_VW_GLOBAL |
| VW2 | KLT345 | | SMA_VW_SPEC |
| VW2 | KLT521 | | SMA_VW_SPEC |
| VW2 | KLT978 | | SMA_VW_SPEC |

# CINDI process

Automobile manufacturers use various delivery concepts/ procedures while ordering components from suppliers which result in procedural and informative requirements that all automotive suppliers must meet. One of these procedures is called CINDI, an extensive procedure consisting of four aspects:

- Transport ID
- Distribution Zone/ Routing Code
- RAN/ KANBAN number/ Delivery call number.
- Point of consumption/ Point of destination

## Transport ID

The Transport ID is sent by the customer organization as a shipping instruction to the supplier to indicate which deliveries (load/ shipments) must arrive at the factory.

LN allows you to reuse the existing shipment reference as the Transport ID. In case only one Transport ID is allowed per shipment , the **Unique Shipment Reference per Shipment** check box in the Warehousing Order Types (whinh0110m000) session must be selected. In case the Transport ID is not provided by the customer, LN creates a temporary ID because defining the shipment reference is mandatory. However, the ID can be manually replaced with the final Transport ID during the outbound process, at a later date. The temporary ID can be maintained up to the status **Frozen** or **Shipped** before being replaced by the final Transport ID.

The user is responsible for the timely replacement of the temporary ID with the final Transport ID (Shipment Reference) at the appropriate time.

## Distribution Zone/ Routing Code

The supplier can also be informed about the more specific destinations within the organization for which a delivery is intended. These destinations are defined as the Distribution Zone or Routing Code. These are the intermediate locations to which the goods are moved after the receipt, at the unloading dock.

If the Distribution Zone (or Routing Code) is provided by a customer organization, this must always be used as a package building criterion. For this purpose, an extra reference field is added on the sales schedule line called **Packaging Reference A** which is picked up by the warehouse order, outbound, and shipping procedure as a criterion while generating handling units during shipment.

The requirements/ items within a Transport ID that are destined for the same Distribution Zone can be combined into the same handling unit; the requirements/ items may not be merged with items/ handling units, destined for other distribution zones.

The Distribution Zone/ Routing Code must be available as extra information and printed on labels and documents to enable the OEM personnel to immediately recognize the (intermediate) destination of a handling unit.

## Point of consumption/ Point of destination

The point of consumption (POC) or point of destination (POD) is the final destination of the received items. It is usually the production or assembly line on which the components are used.

If the Point of consumption (POC) is defined by the customer organization, and thus recorded on the sales schedule, the POC is used as handling unit building criterion. A new handling unit is initiated for each POC. Consequently a new reference field **Packaging Reference B** is added. The field is retrieved from the sales schedule and can be viewed using the **Reference Distribution** option from the **References** menu in the Outbound Order Lines (whinh2120m000) session and the **Reference Distribution** option from the **References** menu in the Shipment Lines (whinh4131m000) session.

When handling units are built, the singles (= lowest packaging level example, a box) created must contain items destined for the same point of consumption/ point of destination. Items can only be packed and

shipped in the same box (single), if the point of consumption/ point of destination of the box and the picked goods is the same.

For easy allocation to the precise POC, information of the POC must be printed on the packaging labels.

## RAN/ KANBAN number/ Delivery call number

The RAN (Registration Authorization Number) can also be provided by the customer organization. This number can be used as an additional constraint during the building of master handling units (= top level packaging item example pallets), for scenarios where only one KANBAN/ RAN number is allowed per master handling unit. Such master handling units are called Homogeneous, while multi-RAN or MixRAN handling units are called Heterogneous.

The RAN information can be printed on the labels and the shipping documents.

# Chapter 16
# Shipment Acceptance

16

## Shipment acceptance DD 250

The Material Inspection and Receiving Report (DD Form 250) can be mandatory for contractors working for the US Government. The report comprises prescribed information relevant to the shipping process and is used for invoicing.

The DD 250 report may require users to check and accept or reject shipments at their source, destination, or both:

- **Source Acceptance**
  The goods must be accepted or rejected at the supplier's or contractor's location during shipment, before the shipments are confirmed. The user performing the acceptance is usually an employee of the supplier or contractor acting on the customer’s behalf.
- **Destination Acceptance**
  The goods must be accepted or rejected at the customer's location during receipt. The accepted or rejected goods are registered for confirmed shipments.
- **Source and Destination Acceptance**
  The goods must be accepted or rejected at both the supplier's or contractor's and the customer's location.

### Roles

These roles are involved in shipment acceptance:

- Warehousing official
- Official working on the customer's behalf

First, the warehousing official specifies the required type of shipment acceptance on the outbound order lines and completes shipment building. If the outbound order lines originate from a contract created in Project, the default shipment acceptance type is retrieved from the contract lines.

Next, if source acceptance is required, the official acting on the customer's behalf specifies the accepted or rejected quantities for the shipment lines involved and completes the acceptance procedure. The warehousing official then confirms the shipments and the goods are shipped.

If destination acceptance is required, a customer official completes the acceptance procedure after the goods have arrived at the customer location.

For both source and destination acceptance, dedicated sessions are available.

## Prerequisites

- The **Shipment Acceptance in use** check box is selected in the Inventory Handling Parameters (whinh0100m000) session.
- **Source acceptance**
  Picking and shipment building is completed, and the status of the shipment lines and shipments is **Open**.
- **Destination acceptance**
  The status of the shipment lines and shipments is **Confirmed**.

**Note**

Shipments can comprise shipment lines that require source acceptance and shipment lines that require destination acceptance. For such shipments, you must complete both the source and the destination acceptance procedure.

# Source acceptance - procedure

## For the warehousing official

1. For the relevant outbound order lines, select the relevant type of shipment acceptance in the **Acceptance Point** field of the Outbound Order Lines (whinh2120m000) session. If the outbound order lines originate from a contract created in Project, you can use the default shipment acceptance type that is retrieved from the contract lines.

   From the outbound order line, LN passes on the selected type of shipment acceptance to the related shipment lines and shipments. You cannot modify the type of shipment acceptance on the shipment lines and shipments.
2. Complete picking and shipment building.
3. In the Shipments (whinh4130m000) session, select the shipment for which acceptance is required.
4. On the appropriate menu, select Submit for Acceptance to set the acceptance mode for the shipment and the shipment lines.

5. When the official acting on the customer's or supplier's behalf has completed the last step of the source acceptance procedure, confirm the shipment.

## For the official acting on the customer's or supplier's behalf

1. Open the Shipment Acceptance (whinh4130m200) session.
2. Double-click a shipment for which source acceptance is required and the **Submitted for Acceptance** check box is selected.

   The Shipment Acceptance (whinh4630m100) session opens.
3. Do one of the following:
   - To accept the entire shipment, on the toolbar, click **Accept**.
   - To accept individual shipment lines, see the next step.
4. Click the Shipment Lines tab and select a shipment line that you want to accept.
5. Do one of the following:
   - To accept the total quantity of the shipment line, see step 6.
   - To accept less than the total quantity, see *Shipment acceptance - to accept or reject quantities (p. 132)*.
6. On the appropriate menu of the Shipment Lines tab, select **Accept** to save the accepted quantity.
7. Select **Freeze** to freeze the shipment line.
8. Repeat steps 3 - 7 for the other shipment lines.
9. To complete the acceptance for the entire shipment:
   - Select the **Inventory Accepted** check box.
   - In the **Accepted by** field, select your user name (or the name of the user on whose behalf you accept the shipments).

# Modify source acceptance

If the source acceptance is completed and the shipment is not yet confirmed:

1. Clear the **Source Accepted** check box in the Shipment Acceptance (whinh4630m100) session. The values in the **Source Acceptance Date** and **Source Acceptance by** fields are removed.
2. Unfreeze the shipment lines that need modification.
3. Repeat steps 4 - 9 of the procedure For the official acting on the customer's or supplier's behalf.

# Destination acceptance - procedure

**For the official acting on the customer's or supplier's behalf:**

1. Open the Shipment Acceptance (whinh4130m200) session.
2. Open a confirmed shipment for which destination acceptance is required.
3. Open a shipment line that you must accept.
4. In the Shipment Lines (whinh4131m000) session, specify the rejected quantity in the **Destination Rejected Quantity** field if required. This field is located on the **Acceptance** tab.
5. Save and close the Shipment Lines (whinh4131m000) session.
6. You return to the Shipment Acceptance (whinh4630m100) session.

   Select the **Inventory Accepted** check box.
7. In the **Accepted by** field, select your user name (or the name of the user on whose behalf you accept the shipments).

The destination rejected quantities are only used for reference and do not trigger any inventory movements, updates in invoicing, or the creation of financial transactions. The destination rejected quantities are updated in the contract deliverables.

# Shipment acceptance - to accept or reject quantities

The toolbar on the Shipment Lines tab of the Shipment Acceptance (whinh4630m100) session shows whether the shipment lines have stock point details or handling units. If you select a shipment line and the **Stock Point Details** or the **Handling Unit Tree** options are available, the shipment line contains stock point details or handling units. The **Shipment Line Packing Structure** option is always available, even if no packing structures are used.

To specify accepted or rejected quantities for shipment lines that contain:

**Items without packing materials, stock point details, or handling units**

1. On the toolbar of the Shipment Lines tab, click **Shipment Line Packing Structure**. The Shipment Line Packing Structure (whinh4136m000) session opens.
2. Specify the shipped quantity in the **Shipped Quantity in Storage Unit** field.
3. Click Save and close the Shipment Line Packing Structure (whinh4136m000) session.

### Packing structure with stock point details

1. Accepted and not shipped quantities specified for the stock point details are propagated to the packing structure.
   - On the toolbar of the Shipment Lines tab, click **Stock Point Details**. The Shipment Line Stock Point Details (whinh4133m000) session opens.
   - If the items are serialized, select the **Not Shipped** check box for each item that you want to reject.
   - Otherwise, specify the accepted quantity in the **Shipped Quantity** field. LN marks the remaining items as rejected.
2. Save and close the Shipment Line Stock Point Details (whinh4133m000) session.

### Handling units

1. On the toolbar of the Shipment Lines tab, click **Handling Unit Tree**.
2. Select the handling unit and on the toolbar, click **Stock Point Details** to reject one or more items of the handling unit.
3. In the Handling Unit Stock Point Details (whwmd5136m000) session that opens, select the **Not Shipped** check box for each item that you want to reject.
4. Save and close the Handling Unit Stock Point Details (whwmd5136m000) session.
5. Save and close the **Handling Unit Tree**.

**Important!**

After specifying the accepted or not shipped quantities in the relevant sessions, you return to the Shipment Acceptance (whinh4630m100) session. Complete steps 6 - 9 in For the official acting on the customer's or supplier's behalf to finish the source acceptance procedure.

# Chapter 17
# Shipment Validation

17

## Shipment validation

Shipment validation is an optional step that you can add to the outbound flow. It is a process that verifies if specific trading partner requirements are met. For this purpose, this process performs various checks on shipments and loads, such as:

- Are the required handling units present?
- Are the tracking numbers present?
- Are the supplier numbers present?

Shipment validation is performed outside LN by Automotive Exchange Export Manager (EXM), where the validation checks have been defined. BODs are used to send the required shipment, load, and other master data information from LN to EXM, and to return the validation results from EXM to LN.

The shipment validation process includes these steps:

### Step 1: Frozen: shipment validation starts

The shipment validation process is launched when a shipment or a load is **Frozen**. This means that the validation checks are started up in EXM. While the validation is in progress, the validation status is set to **Validating**.

The shipment validation status is displayed in the **Publishing Status** field in the Shipments (whinh4130m000) or Loads (whinh4140m000) session.

### Step 2: Frozen: checks completed and shipping documents printed

When the validation checks are completed in EXM, the shipment validation status can be either of the following:

- **Validated**
  The validation in EXM is successful, the shipping documents are printed. See next step.

- **Validation Error**
  The loads or shipments must be corrected in LN and the corrections must be sent to EXM. This will reset the validation status to **Validating**.

### Step 3: Confirmed: confirm when validated

For successful validations, the validation status is set to **Validated**. The user can confirm the shipments and loads, after which EXM delivers the advance shipping notice (ASN). The resulting improved accuracy of the shipping documents and ASNs ensures a more cost-effective and efficient shipping process.

## Setup

To use shipment validation:

- The **Freeze Mandatory** and **Shipment Validation** check boxes must be selected in the Warehousing Order Types (whinh0110m000) session.
- BOD publishing must be activated.

**Note**

If the validation status is **Validating** or **Validation Error**, shipments or loads cannot be confirmed. Only loads or shipments with the **Validated** status can be confirmed.

# Shipment validation - to correct validation errors

EXM can return various validation errors, such as:

- Missing master data, for example the **Our Supplier Number** of the sold-to business partner.
- Missing or incorrect shipment data, such as the **Tracking Number** or handling units.
- Nonconforming shipment or handling unit structure.

Details about validation errors are displayed in the Message Log (tcstl1500m000) session, which you can open in the appropriate menu of the Shipments (whinh4130m000) or Loads (whinh4140m000) session. If no errors are present (when the shipment validation status is **Validated**), this session is not available.

To correct shipment structures, handling unit structures, and most other shipment data, reopening and refreezing the loads or shipments is required. Refreezing automatically publishes this data to EXM.

However, reopening and refreezing the loads or shipments is not required to correct the following data:

- The **Tracking Number** on the shipment and the **Carrier Tracking Number** on the load. If you change these numbers on the frozen shipment or load, the validation status changes to **Modified**.
- Master data not maintained on the shipment or load, but printed on the shipping documents, such as the **Our Supplier Number**. Correcting this data does not affect the validation status.

To publish corrected load, shipment, or other master data for which reopening and refreezing is not required, use the Publish Shipment or Publish Load options in the Shipments (whinh4130m000) or Loads (whinh4140m000) session.

Refreezing or using the publishing options resets the validation status to **Validating**.

**Note**

- You can publish a load irrespective of the statuses of the shipments linked to the loads.
- To confirm a load, the status of the shipments of the load and the load itself must be **Validated**.
- If all but one of the shipments linked to a load are confirmed, this last shipment can only be confirmed if the load status is **Validated**. This is to prevent that validation errors of the load are overlooked.

## To overrule the EXM **Validating** or **Validation Error** status

If a shipment must be shipped urgently despite unfinished validation or validation errors, authorized users can validate shipments or loads with the **Validating** or **Validation Error** statuses. For this purpose, the **Release Shipment** or **Release Load** option is used in the Shipments (whinh4130m000) or Loads (whinh4140m000) session. The status is then set to **Validated**.

This authorization is provided if the **Release Unvalidated Loads/Shipments** check box is selected for a user in the Warehousing User Profiles (whwmd1540m000) session.

# Shipment validation - interaction with shipment acceptance and scan-to-verify

If shipment validation is used in combination with the shipment acceptance and scan-to-verify procedures, the type of shipment acceptance determines the order in which you must use these procedures.

## Source acceptance

Source acceptance is performed for shipments with status **Open**. Therefore, you must deploy source acceptance before shipment validation or scan-to-verify, because the latter procedures requires the shipments to be **Frozen**.

## Destination acceptance

Destination acceptance is performed for shipments with status **Confirmed**. Therefore, you must deploy destination acceptance after shipment validation or scan-to-verify, because the latter procedures requires the shipments to be **Frozen**.

# Chapter 18
# Scan-to-Verify

18

## Scan-to-verify

Scan-to-verify is an optional step that you can add to the outbound flow. It is a process that is used to verify if the handling units about to be loaded at the staging location match the handling units linked to the shipment lines in LN. If yes, the handling units can be loaded, the shipments can be confirmed, and the ASNs can be sent.

To start the scan-to-verify process, a shipment must be set to **Frozen** to prevent that changes are made to the shipment while scanning is in progress.

The verification is done by scanning the labels of the handling units at the loading dock.

If a scanned handling unit label matches a handling unit label in LN, the **Confirmed for Shipping** check box is selected for the handling unit. If all handling units are scanned successfully, the scan-to-verify process is completed and the shipment line to which the handling units are linked can be confirmed.

**Note**

When the **Confirmed for Shipping** check box is selected for a handling unit, the status of the handling unit is still **Staged**.

The status of the handling unit is set to **Shipped** when the linked *shipment line* is confirmed. The setting of the **Confirm Shipment Lines when confirming Handling Units** check box in the Warehousing Order Types (whinh0110m000) session determines whether the shipment lines are confirmed automatically when all of the linked handling units are confirmed.

In the Shipment Lines (whinh4131m000) session, the **Indicator** field shows the actions to be taken to complete the shipment procedure (which can include the scan-to-verify process). In the Shipments (whinh4130m000) and Shipment Lines (whinh4131m000) sessions, the **Handling Unit Based Confirmation** check box shows whether handling unit based confirmation is mandatory.

## Setup

To use the scan-to-verify functionality, the **Freeze Mandatory** and the **Handling Unit Based Confirmation** check boxes must be selected in the Warehousing Order Types (whinh0110m000) session.

## Automatically or manually confirming shipment lines when confirming handling units

The setting of the **Confirm Shipment Lines when confirming Handling Units** check box in the Warehousing Order Types (whinh0110m000) session determines whether the shipment lines are automatically confirmed when all of the linked handling units are confirmed.

Handling units are confirmed in one of these ways:

- Using the **Confirm** option in the **Handling Unit Tree**.
- Using the Confirm option on the **Execute Outbound** submenu of the Handling Units (whwmd5130m000) session.
- After a successful scan if the scan-to-verify process is used.

As a result, the **Confirmed for Shipping** check box is selected for the handling unit.

The status of the handling unit changes to **Shipped** when the shipment line of the handling unit is confirmed. The shipment line is automatically confirmed if the **Confirm Shipment Lines when confirming Handling Units** check box is selected and all of the linked handling units are confirmed.

If the shipment lines containing the handling units are automatically confirmed, the status of the shipment lines changes to **Confirmed** and the status of the handling units changes to **Shipped** after the last handling unit is successfully scanned. Consequently, changes to the shipment lines or the handling units are not allowed.

If the shipment lines are not automatically confirmed after confirming the handling units, the shipment line status **Frozen** and the handling unit status **Staged** are retained. Consequently, you can adjust the shipping structure if required.

For example, if the shipment line contains 100 handling units of type Box but the truck can contain only 80 boxes. You can solve this by reopening the shipment line and setting 20 handling units of type Box to **Not Shipped**. Consequently, these handling units are no longer part of the shipment and the **Confirmed for Shipping** check box is cleared.

## Unconfirmed handling units after scan is completed

If after scanning the bar code scanner generates an error message and some of the handling units of the shipments in LN are unconfirmed, the labels of the unconfirmed handling units of the shipment are different from the labels of the scanned handling units at the loading dock. This means that incorrect handling units are picked and must be replaced with the correct handling units. After replacement, the scanning process must be repeated for the newly picked handling units.

# Chapter 19
# Authorized Excess Transportation Costs (AETC)

19

## Authorized excess transportation costs (AETC)

To control transport costs, various organizations require their suppliers to ask for approval if the transport costs exceed the agreed terms. The supplier is to request a customer authorization number.

When granted by the customer, the supplier specifies the customer authorization number on the load.

The supplier also specifies a reason code in the **Reason** field and a reference to the party responsible for the excess costs in the **Responsibility** field. The responsible party can be, for example, the carrier that performs the actual transport.

**Note**

This applies to Freight and Warehousing loads. The values specified for the Freight load is copied to the Warehousing load and vice versa.

### To specify a customer authorization number, reason, and responsible party on the load

1. Specify a tracking number of type **Customer Authorization Number** in one of these tracking number fields of the load:
   - **Carrier Tracking Number**
   - **Tracking Number**
   - **Tracking Number 1**
   - **Tracking Number 2**

   Adding a tracking number of type **Customer Authorization Number** is allowed in only one of these fields. After adding the customer authorization number, the **Reason** and **Responsibility** fields become available.
2. Specify a reason code of type **Customer Authorization Number** in the **Reason** field.
3. In the **Responsibility** field, specify the party responsible for the excess transportation costs.

# Setup

1. For the ship-to business partner role of the customer who requires AETC authorization from their suppliers, select the **Authorize Excess Transportation Costs** check box in the Ship-to Business Partners (tccom4511m000) session to specify that the business partner requires excess authorization numbers.

   When this business partner is specified on the load, the **Authorize Excess Transportation Costs** check box on the load is selected.

2. For the applicable order types, select the **Single Ship-to Code per Load** check box in the Warehousing Order Types (whinh0110m000) session. This is to prevent multiple shipments with different settings for the **Authorize Excess Transportation Costs** check box from being combined in a load.

3. In the **Reason** field of the Reasons (tcmcs0105m000) session, define reason codes of type **Customer Authorization Number**.

   After specifying a reason code of type **Customer Authorization Number**, the **Excess Transportation Reason** field is available.

4. In the **Excess Transportation Reason** field, specify a transportation cost excess reason, or use the default value **Not Applicable**.

# Appendix A Glossary

A

## activity

A step in a warehousing procedure. An activity corresponds with a session of the Warehousing package. For example, the inbound activity Generate Inbound Advice is performed using the Generate Inbound Advice (whinh3201m000) session.

## advance shipment notice

A notification that a shipment has been sent. Advanced shipment notices are sent and received by means of EDI. You can receive advance shipment notices from your supplier informing you that goods are to arrive at your warehouse, and/or you can send advance shipment notices to your customers that the goods they ordered are about to be delivered.

Synonym: shipment notice

Abbreviation: ASN

## advance shipping notice

A form of pre-invoicing. The customer receives an advance notification of details of a shipment that is on its way to the customer.

Acronym: ASN

## appropriate menu

Commands are distributed across the **Views**, **References**, and **Actions** menus, or displayed as buttons. In previous LN and Web UI releases, these commands are located in the *Specific* menu.

## ASN

See: *advance shipping notice (p. 143)*

## ASN

See: *advance shipment notice (p. 143)*

### availability type

An indication of the type of activity for which a resource is available. With availability types, you can define multiple sets of working times for a single calendar.

For example, if a work center is available for production on Monday through Friday and available for service activities on Saturdays, you can define two availability types, one for production and one for service activities and link these availability types to the calendar for that work center.

### backorder

An unfilled customer order, or partial delivery at a later date. A demand for an item whose inventory is insufficient to satisfy demand.

### bill of lading

The legal document used by the carrier that states what is transported (nature, quantity, weights, and so on) to what address.

### blocking

A function used to block inventory transactions. You can define blockings by zone, location, lot, stock point, or serialized item.

See: reason for blocking

### Business Object Document (BOD)

An XML message used to exchange data between enterprises or enterprise applications. The BOD is composed of a noun, which identifies the message content, and a verb, which identifies the action to be taken with the document. The unique combination of the Noun and the Verb forms the name of the BOD. For example, noun ReceiveDelivery combined with verb Sync results in BOD SyncReceiveDelivery.

### carrier

An organization that provides transport services. You can link a default carrier to both ship-to and ship-from business partners. In addition, you can print sales and purchase orders on a packing list, sorted by carrier.

For ordering and invoicing, you must define a carrier as a business partner.

Synonym: forwarding agent, Logistics Service Provider (LSP)

### contract deliverable

A contract deliverable is a tangible or intangible item that is produced or purchased as a result of a contract.

## cross-dock order

An outbound order line for which the goods must be cross-docked. A cross-dock order can be fulfilled by creating cross-dock order lines for it.

See: cross-dock order line

## delivery note

A transport document that provides information on a consignment contained in one truck (or other vehicle) and refers to an order or a set of orders for one consignee at a delivery address. If the truck load contains shipments for various business partners, the load includes more than one delivery note. The information on a delivery note includes the delivery date and address, the customer's name, the contents of the consignment, and so on. In Italy, a delivery note is a legally required document, where it used to be called BAM (Bolla Accompagnamento Merci). Currently it is called DDT (Documento di Trasporto). In Portugal and Spain delivery notes are also used, but there they do not have the same legal status as in Italy.

## EDI message

A standard electronic business document consisting of an organization name and a message. EDI messages are processed as incoming or outgoing messages.

An EDI messages can concern, for example, an order acknowledgement or an advance shipment notice (ASN).

Organizations that determine EDI message standards are:

- ANSI
- X12
- UN/EDIFACT
- ODETTE
- VDA

## forwarding agent

See: *carrier (p. 144)*

## freight order

A commission to transport a particular number of goods. A freight order includes an order header and one or more order lines.

A freight order header includes some general information, such as the delivery date and the name and address of the customer who is to receive the goods listed on the freight order.

A freight order line includes an item to be transported and some details about the item, such as the quantity and the dimensions.

## handling unit

A uniquely identifiable physical unit that consists of packaging and contents. A handling unit can contain items. A handling unit has a structure of packaging materials used to pack items, or is a part of such a structure.

A handling unit includes the following attributes:

- Identification code
- Packaging item (optional)
- Quantity of packaging items (optional)

If you link an item to a handling unit, the item is packed by means of the handling unit. The packaging item refers to the type of container or other packing material of which the handling unit consists. For example, by defining a packaging item such as Wooden Crate for a handling unit, you specify that the handling unit is a wooden crate.

See: handling unit structure

## intermediate consignee

A distribution center where goods sent from the supplier are consolidated and often repacked before being shipped to the final destination at the customer's. An intermediate consignee is owned by the customer or a carrier acting on behalf of the customer.

## inventory transaction type

A classification that is used to indicate the type of inventory movement.

The following inventory transaction types are available:

- **Issue**
  From warehouse to other entity than warehouse.
- **Receipt**
  From other entity than warehouse to warehouse.
- **Transfer**
  From one warehouse to another.
- **WIP Transfer**
  From one costing work center to another.

## load

In LN, all goods and/or shipments carried by one means of transport on a specific date and time and using a specific route.

## load building

The freight planning engine of Freight. The load building engine groups goods that require transportation into shipments and loads.

## load plan

The identification of a structure of shipments and loads created for one or more freight orders. The shipments and loads show the transport planning details, such as planned loading and unloading dates and addresses, of the freight orders for which transportation planning is generated. You can use the load building engine to create a load plan. If you select a range of freight orders and start up the load building engine, the freight orders are grouped into shipments and loads. The resulting shipments and loads form a load plan. You can also create load plans manually.

Synonym: plan

## Logistics Service Provider (LSP)

See: *carrier (p. 144)*

## main warehouse

A warehouse from which goods are shipped that are issued from a specific group of connected warehouses called subwarehouses.

## outbound advice

A list generated by LN that advises you the location and lot from which goods must be picked and possibly issued, taking into account factors such as blocked locations and the outbound method.

## outbound-order line

A warehouse-order line that is used to issue goods from a warehouse.

An outbound-order line gives detailed information about planned issues and actual issues, for example:

- Item data.
- Ordered quantity.
- Warehouse from where the goods are issued.

## packing list

A document that shows all shipments of a load.

## packing slip

An order document that shows in detail the contents of a particular package for shipment. The details include a description of the items, the shippers or customers item number, the quantity shipped, and the inventory unit of the shipped items.

## picking list

A document that lists the material to be picked for manufacturing or shipping orders. This document is used by operating personnel to pick manufacturing or shipping orders.

See: picking

## plan

See: *load plan (p. 147)*

## planned inventory transactions

The expected changes in the inventory levels due to planned orders for items.

## planning group

An entity that is used to group freight order lines into shipments and loads or freight order clusters.

Each freight order line is allocated to a planning group. Freight order lines with different planning groups cannot be in the same shipment, load, or freight order cluster. For example, all goods destined for Belgium are subdivided into planning group Belgium.

From a hierarchical perspective, the planning group is one level below the shipping office. A shipping office has one or more planning groups. Freight orders are grouped into shipping offices, the underlying freight order lines are grouped into the planning groups of the shipping office.

## pooling

Pooling is a planning method, also called planning algorithm, in which multiple fixed addresses, such as distribution centers, ports, and so on, covered by a route plan, are visited. In such cases, the transport route usually consists of several legs.

At one of the legs, shipments travel the same way and are pooled together to go to their destination or to a distribution point. At the distribution point, the shipments are reallocated to different means of transport to be taken to their final destination.

**Example**

50 bicycles go from Amsterdam to New York, another 50 go from Amsterdam to Philadelphia, and a third lot of 20 bicycles goes from Amsterdam to Pittsburgh. The first leg is from Amsterdam to Rotterdam by truck. Rotterdam is the pooling point, where the bicycles are loaded aboard a ship. In New York, they are unloaded and loaded in trucks that take them to their respective final destinations in New York, Pittsburgh, and Philadelphia.

## receipt

The physical acceptance of an item into a warehouse. A receipt registers: received quantity, receipt date, packing-slip data, inspection data, and so on.

## route plan

A network of loading and unloading addresses, one of which is a pooling point. A route plan is usually defined for routes that involve multi-modal transport. A route plan consists of one or more legs. Each leg, or part of the route, can be handled differently depending on the specified transport category and transport means group.

### rush order

An order that must be executed as soon as possible and that usually requires special payment and delivery terms.

### sales release

Identifies, by one release number, those sales schedules that share the following common characteristics:

- Sold-to business partner
- Ship-to business partner
- Ship-to address
- Release type (material release/ shipping schedule/ sequence shipping schedule/ pick-up sheet)
- Shipment based schedule/ receipt based schedule
- Schedule quantity qualifier
- Forecast horizon start and end
- Sales release origin
- Customer release
- (Customer order)
- Customer contract reference

### sales schedule

A timetable of planned supply of materials. Sales schedules support long-term sales with frequent deliveries. All requirements for the same item, sold-to business partner, ship-to business partner, and delivery parameter are stored in the same sales schedule.

### ship-from type

The ship-from type is used, together with the ship-from code, to identify the exact source of a warehousing order.

The ship-from type can have the following values:

- **Business Partner**
- **Warehouse**
- **Work Center**
- **Project**

### shipment

All goods that are transported to a specific address on a specific date and time by using a specific route. An identifiable part of a load.

### shipment line

An entity that provides information about one of the items listed on a shipment, such as the weight, the quantity, or the additional costs.

### shipment notice

See: *advance shipment notice (p. 143)*

### shipment procedure

A procedure that is carried out when a warehouse order or a shipment is processed for transportation. In a shipment procedure, you can specify which transport documents (packing list, packing slip, or Bill of Lading) must be printed when the shipment is transported. For each shipment, a shipment procedure is defined. If a shipment obtains the **Confirmed** status, the documents specified in the shipment procedure are printed.

### shipping container

A subdivision of a load that contains shipments. The packaging items defined for a container determines the type of container.

### shipping manifest

A shipping document that describes the content of the shipping structure consisting of loads, shipments, and, if implemented, containers, created for a warehousing order or order set. The shipping structure can contain separate items or items included in BOM or kit structures.

### shipping office

A department that is responsible for the organization of transportation for one or more warehouses. When goods are moved from or to a warehouse, the responsible shipping office plans the transportation of these goods or subcontracts the transportation of the goods. In direct delivery scenarios, the shipping office provides planning or transport subcontracting services for external suppliers or customers.

In Freight, a shipping office plays a key role in load building and freight order clustering. Freight orders are grouped by shipping office. The groups of freight orders by shipping office are used by the load building engine to build shipments and loads, or by the freight order clustering engine to build freight order clusters.

### ship-to business partner

The business partner to whom you ship the ordered goods. This usually represents a customer's distribution center or warehouse. The definition includes the default warehouse from which you send the goods, the carrier who carries out the transport, and the related sold-to business partner.

Synonym: ship-to customer

### ship-to customer

See: *ship-to business partner (p. 150)*

### sold-to business partner

The business partner who orders goods or services from your organization, who owns the configurations you maintain, or for whom you perform a project. Usually a customer's purchase department.

The agreement with the sold-to business partner can include:

- Default price and discount agreements
- Sales order defaults
- Delivery terms
- The related ship-to and invoice-to business partner

### standard route

A standard route is a fixed route that is traveled with a particular frequency, such as a truck that visits delivery and/or loading addresses according to a fixed schedule, a rail service, or a boat service. Usually, transportation via standard routes costs less than travel via non-fixed routes. For example, you can define a route like Amsterdam via Rotterdam to Antwerp that is run once a day.

### stock point

The smallest inventory level that can be registered in LN.

The stock point is defined by the following data:

- Warehouse
- Location: only if you have locations
- Item
- Inventory date: important if you work with LIFO or FIFO
- Lot: only if the item is low volume lot controlled

### subwarehouse

A warehouse from which items are issued that will be shipped from the related main warehouse.

### transfer

The transfer of goods from one warehouse to another (possibly including such activities as repacking).

### transfer order

A type of warehousing order that is created to register inventory transactions from an issuing warehouse to a destination warehouse, or between two locations in a warehouse. A transfer order can be created manually or be generated by other packages or modules in LN. A transfer order has transaction type **Transfer**.

Synonym: warehouse transfer, warehousing transfer order

### warehouse order

See: *warehousing order (p. 152)*

### warehouse transfer, warehousing transfer order

See: *transfer order (p. 151)*

### warehousing assembly order

A commission to assemble the components of an end item.

### warehousing order

An order for handling goods in the warehouse.

A warehouse order can be of the following inventory-transaction types:

- **Receipt**
- **Issue**
- **Transfer**
- **WIP Transfer**

Each order has an origin and contains all the information required for warehouse handling. Depending on the item (lot or non-lot) and warehouse (with or without locations), lots and/or locations can be assigned. The order follows a predefined warehousing procedure.

**Note**
In Manufacturing a warehousing order is often called a warehouse order.

Synonym: warehouse order

### warehousing order type

A code that identifies the type of a warehousing order. The default warehousing procedure that you link to a warehousing order type determines how the warehousing orders to which the order type is allocated are processed in the warehouse, although you can modify the default procedure for individual warehousing orders or order lines.

### warehousing procedure

A procedure to handle warehousing orders and handling units. A warehousing procedure comprises various steps, also called activities, that a warehousing order or a handling unit must take to be received, stored, inspected, or issued. A warehousing procedure is linked to a warehousing order type, which in turn is allocated to warehousing orders.

# Index