



Infor LN Warehousing User Guide for Delivery Notes and Shipments

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About this document

This guide describes the setup and use of delivery notes.

Intended Audience

This book is intended for those who want to learn how to use delivery notes 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.

Document summary

The first chapter, *Introduction*, describes the purpose and the general characteristics of delivery notes.

The following chapters deal with master data and parameter setup, describe how delivery notes are created and linked to shipments, and delivery note maintenance.

This book describes procedures that users carry out using delivery notes and provides some information on the underlying processes that LN carries out. The most important session windows and fields involved are discussed, but a full description of all software components is outside the scope of this book. For details, refer to the online Help.

How to read this document

This document was assembled from online Help topics. As a result, references to other sections in the manual are presented as shown in the following example:

For details, refer to *How to print delivery notes*.

Please refer to the Table of Contents to locate the referred section.

Underlined terms indicate a link to a glossary definition. If you view this document online and you click on underlined text, you jump to the glossary definition at the end of this document. Non-underlined references do not represent a link to glossary definitions or other elements.

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Delivery notes

A delivery note is 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.

A delivery note is one of the shipping documents that can be part of a shipment procedure. Various parameter settings control if and how the delivery note functionality is used.

How to set up delivery notes

To make sure that the delivery notes functionality works in the preferred way, various parameters must be set and data must be defined in Warehousing and, if Freight is used, in Freight as well. For information on delivery note setup for Freight, see *Delivery note setup in Freight Management* (p. 11).

Step 1: Enable delivery notes functionality

To enable the user to use the delivery notes functionality, in the **Concepts (Logistics)** tab of the Implemented Software Components (tccom0100s000) session, check the **Delivery Notes** check box.

Step 2: Define Reasons

In the **Reason** field of the Reasons (tcmcs0105m000) session, define two reasons, one with reason type **Delivery Code** and one with reason type **Motive of Transport**.

The delivery code indicates the party that is to pay for the transportation of the goods listed on the delivery note. For example, you can define delivery code reasons such as Customer, Supplier, Shipper, and so on. The motive of transport indicates the reason why transportation takes place, for example, Sales, Scrap Yard, Repair, and so on. In addition, LN uses the motive of transport and the delivery code to allocate delivery notes to shipments and to combine shipments in loads.

Users can enter these reason codes in sales order lines, sales schedules, service orders, and maintenance sales orders. The reason codes will be defaulted on a delivery note when the delivery note is created. If not entered in these orders, the reason codes can be entered in warehousing orders and shipments. You can define default reason codes for order types and warehouses. This is discussed in the following steps.

Step 3: Define default reasons for order types

In the Default Order Types by Origin (whinh0120m000) session, you can define default delivery codes and motives of transport for warehousing order types that are linked to particular order types of originating orders. What you accomplish in this way, is that a delivery code or motive of transport is defaulted on a warehousing order that is created for a particular type of originating order if the user did not enter a

delivery code or motive of transport on the originating order. LN then passes on the delivery code or motive of transport to the shipment, the load, and the delivery note.

Step 4: Set delivery note parameters

In the Inventory Handling Parameters (whinh0100m000) session, select the required values for the following fields:

- **Print Cost/Service Item on Delivery Note**
- **Print Manufactured Item or Components on Delivery Note**
- **Number Group**
- **Series**

Step 5: Set user profiles

- In the User Profiles (whwmd1140s000) session, select the required series in the **Series for Delivery Notes** field.
- In the Default Devices by User (whwmd1545m000) session, select the required default device for the Print Delivery Notes (whinh4477m000) session.

Step 6: Add print delivery note to shipment procedure

To enable delivery notes to be printed, in the Activities by Procedure (whinh0106m000) session, define the Print Delivery Notes (whinh4477m000) session as an activity for the shipment procedures in which delivery notes are required.

Step 7: Enable or disable delivery notes for warehouses

For each warehouse, you must specify whether for items issued from the warehouse, delivery notes must be printed.

These settings overrule the warehousing procedure settings (see previous step). This means that if you specify that delivery notes must not be printed for a particular warehouse, no delivery notes are printed for orders requiring the issue of items from this warehouse even though the warehousing procedure for these orders includes delivery notes.

For this purpose, select the required values for the following fields in the Warehouses (whwmd2500m000) session:

- **Transport Document**
- **Suppress Printing Packing Slip**

Step 8: Adjust print delivery note activity for order activities

If the Print Delivery Notes (whinh4477m000) session is defined as an activity for a particular shipment procedure, in the Activities by Warehousing Order (whinh2104m000) session, you can adjust the following settings of the activity for an individual warehousing order that uses this shipment procedure:

- Select or clear the **Automatic** check box
- Select a printer from the **Output Device** list

Note, however, that warehouse procedure settings that control delivery notes can be overruled by delivery note settings for warehouses, which is described in the previous step.

Step 9: Adjust print delivery note activity for order line activities

If the Print Delivery Notes (whinh4477m000) session is defined as an activity for a particular shipment procedure, in the Activities by Outbound Order Line (whinh2124m000) session, you can adjust the following settings of the activity for an individual warehousing order line that uses this shipment procedure:

- Select or clear the **Automatic** check box
- Select a printer from the **Output Device** list

Note, however, that warehouse procedure settings that control delivery notes can be overruled by delivery note settings for warehouses, which is described in step 7.

Delivery note setup in Freight Management

A delivery note is one of the shipping documents optionally created when the shipment procedure is carried out. Parameter settings control if and how the delivery note functionality is used.

If the delivery note functionality is used, Freight adds the following delivery note attributes to the criteria used to group freight orders for freight planning or freight order clustering purposes:

- **Motive of Transport**
- **Delivery Code**

In this way, clusters created from freight orders are grouped by delivery note, and shipments created from freight orders are grouped by delivery note and load. A load can contain more than one group of shipments-by-delivery-note, but a delivery note cannot refer to more than one load. If more than one load is needed to contain the shipments, for each additional load, a new delivery note is created.

Delivery codes and motives of transport are entered on originating orders and passed on to freight orders, or defaulted on the freight order from the Freight Order Type - Defaults (fmfmd0165m000) session if not entered on the originating orders. You can also manually enter these attributes on freight orders.

Delivery notes are created and maintained in Warehousing. For further information, see *Delivery notes* (p. 7).

Setup

To make sure that delivery codes and motives of transport are used to select freight orders for freight planning or freight order clustering in the preferred way, take the following steps:

Step 1: Define default values for freight order types

In the Freight Order Type - Defaults (fmfmd0165m000) session, you can define default delivery codes and motives of transport for freight order types. What you accomplish in this way, is that a delivery code or motive of transport is defaulted on a freight order that is created for a particular type of originating order if the user did not enter a delivery code or motive of transport on the originating order. LN then passes on the delivery code or motive of transport to the shipment, the load, and the delivery note created from the freight order.

Step 2: Define plan matrix

In the Plan Matrix (fmfoc1120m000) session, you can define delivery codes and motives of transport as criteria to retrieve planning groups for freight order lines.

Step 3: Define shipping office matrix

In the Shipping Office Matrix (fmfoc1140m000) session, you can define delivery codes and motives of transport as criteria to retrieve shipping offices for freight orders. For further information, see Freight order grouping and The use of shipping offices and planning groups.

How delivery notes are created

A delivery note is automatically created when a shipment is created, unless various data of the shipment match the data of a delivery note created earlier. In such cases, LN links the shipment to the existing delivery note. As a result, a delivery note can refer to more than one shipment, and via the shipment, to more than one originating order.

Delivery note data and preliminary/definite ID numbers

When a delivery note is created, the data of the delivery note is copied from the shipment. The delivery note obtains a preliminary delivery note number, which is also displayed on the shipments to which the delivery note refers.

The definite delivery note number is generated if at least one of the shipment lines to which the delivery note refers is frozen or confirmed. For further information, see Shipment and load status.

After a delivery note is created, you can maintain the delivery note and print preliminary and final versions.

Chapter 4

Delivery notes and shipments

4

How shipments are linked to existing delivery notes

LN links a shipment to an existing delivery note if the following values match:

Ship-from data

- Ship-from Code
- Ship-from Type
- Ship-from Address

Ship-to data

- Ship-to Type
- Ship-to Code
- Ship-to Address
- Carrier/LSP
- Route
- Motive of Transport
- Delivery Code
- Delivery Terms
- Sold-to Business Partner
- Invoice-to Business Partner
- The weight of the shipment does not cause the **Total Weight** of the load to exceed the **Maximum Weight** of the load.

How shipments are combined into loads - delivery notes

If the delivery notes functionality is used, shipments that are allocated to the same delivery note are grouped into a load. A load can contain more than one group of shipments-by-delivery-note, but a delivery note cannot refer to more than one load. If more than one load is needed to contain the shipments, for each additional load, at least one new delivery note is created.

To combine shipment lines into shipments, the following criteria are added:

- **Motive of Transport**
- **Delivery Code**

To combine shipments into loads, the following criterion is added:

- The weight of the shipment does not cause the **Total Weight** of the load to exceed the **Maximum Weight** of the load.

Move a shipment to another load

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.

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.

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

To modify shipment data

LN allows you to modify the warehouse shipment data and the load data on the open shipments at a later stage of the outbound process.

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 **Point of Title Passage**

- You can also modify the **Point of Title Passage** for the shipments.

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.

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.

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 Or- der 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 is manually filled by the end-user.	empty	no	Add to Shipment
	empty	yes	Add to Shipment
	AAA	no	Add to Shipment
	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, empty	no	create new shipment	
Shipment reference=AAA	empty	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.

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.

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 (fmfr0100m000) session.
- The **Estimated Freight Costs**, Select Carrier/LSP, and Log Select Carrier/LSP fields in the Loads (whinh4140m000) session.

Delivery notes - Ownership of goods during transport

When delivery notes are printed, the owner data of the goods is also included. This owner data is retrieved, based on the following hierarchy:

1. The ownership data is retrieved from the Shipment Line Ownership (whinh4138m000) session in case the value in the **Ownership** field is **Customer Owned**.
Note that this owner can be a different business partner than the ship to business partner specified on the order.
2. For transfer orders, the ownership data is retrieved from the Shipment Line Ownership (whinh4138m000) session if the following conditions are fulfilled:
 - The value in the **Ownership** field is **Consigned**.
 - The **Ownership Change on Issue** check box is not selected.
3. The ownership data is retrieved from the business partner specified in the **Invoice-to Business Partner** field in the Delivery Notes (whinh4135m000) session if the value in the **Point of Title Passage** field in the Shipments (whinh4130m000) session is **Point of Origin**.
The ownership data is retrieved from the **Ship-From** field in the Delivery Notes (whinh4135m000) session if the value in the **Point of Title Passage** field in the Shipments (whinh4130m000) session is one of the following:
 - **Point of Destination**
 - **Named Location**

Note: You can specify this **Point of Title Passage** in the given **Delivery Terms** in the Delivery Terms (tcmcs0141m000) session.

This step is performed if no ownership data is defined in the sessions specified in step 1 and 2.

4. The ownership data is retrieved from the Warehouses (whwmd2500m000) session if ownership data is not defined in the sessions specified .

To maintain delivery notes

Delivery notes are maintained in the Delivery Notes (whinh4135m000) session. In this session, you can maintain delivery note data if the delivery note has a status other than **Completed**. For further information, see *Delivery Note Status* (p. 29).

You can delete a delivery note if the status is **Completed** provided that all orders relating to the delivery note are completely processed.

Delivery Note Status

- **Canceled**
The load to which delivery note refers is canceled.
- **Open**
At least one of the shipments to which the delivery note refers has status **Open**.
- **Frozen**
At least one of the shipments to which the delivery note refers has status **Frozen**, and none of these shipments has status **Open**.
- **Confirmed**
All of the shipments to which the delivery note refers have status **Confirmed**.
- **Completed**
The load to which the delivery note refers has status **Confirmed** and the final version of the delivery note is printed.

To print delivery notes

If printing delivery notes is included in a shipment procedure, delivery notes are printed automatically or manually for shipments to which the shipment procedure applies. You can manually print preliminary or final versions for delivery notes in the Print Delivery Notes (whinh4477m000) session.

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. 36)*
- Packaging reference distribution
- 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. 37).

Compose handling Unit

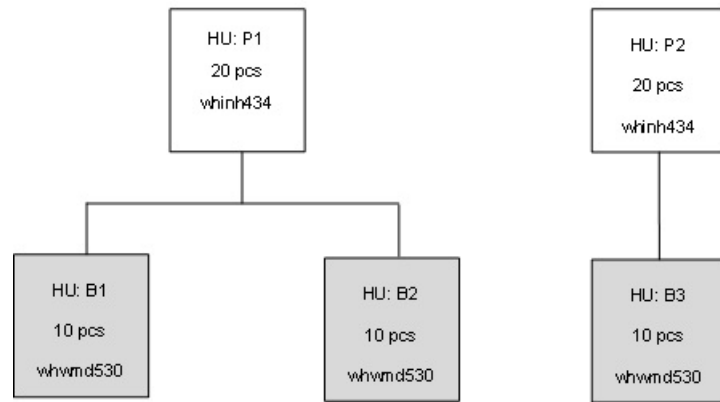
When handling units are composed, additional checks must be executed with respect to the references. When moving handling units from one parent to another, LN considers the handling unit building constraints.

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			Pallet P2			Pallet P3			Pallet P4		
		Single Reference: V			Single Reference: X			Single Reference: V			Single Reference: X		
		Single Reference A: V			Single Reference A: V			Single Reference A: X			Single Reference A: X		
		Single Reference B: V			Single Reference B: V			Single Reference B: X			Single Reference B: X		
		Ref	Ref A	Ref B	Ref	Ref A	Ref B	Ref	Ref A	Ref B	Ref	Ref A	Ref B
		001	A01	B01	001	A02	B02	002	A01	B01	002	A01	B01
Reference	001												
Reference A	A01	V			X			X			V		
Reference B	B01												
Reference	001												
Reference A	A02	X			V			V			V		
Reference B	B01												
Reference	002												
Reference A	A01	X			X			V			V		
Reference B	B01												
Reference	001												
Reference A	A01	X			X			X			V		
Reference B	B02												
Reference	002												
Reference A	A02	X			V			V			V		
Reference B	B02												
Reference	003												
Reference A	A03	X			X			X			V		
Reference B	B03												

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.

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 Heterogeneous.

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

Appendix A

Glossary

A

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

ASN

See: *advance shipment notice (p. 41)*

delivery code

A reason code that indicates who is to pay for the transportation of the goods.

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.

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.

motive of transport

A reason code that indicates why transportation takes place, for example, Repair, Sales, Transfer, and so on.

originating order

The order from which an order is created. For example, if a warehousing order is created from a sales order, the sales order is the originating order of the warehousing order.

shipment notice

See: *advance shipment notice* (p. 41)

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.

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.

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