



# Infor LN Warehousing User Guide for Cross-Docking

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## About this Guide

This guide provides an introduction to cross-docking and describes the cross-docking functions and setup.

### References

Use this guide as the primary reference for cross-docking. Use the current editions of these documents for information that is not covered in this guide:

- *User Guide for Warehousing Procedures*
- *User Guide for Warehouses*
- *User Guide for the Inbound Goods Flow (U9788 US)*
- *User Guide for the Outbound and Shipments Goods Flows (U9794 US)*
- *User Guide for Warehousing Inspections (U9875 US)*
- *User Guide for Warehousing Quarantine Handling (U9876 US)*
- *User Guide for Handling Units U8938 US*
- *User Guide for Delivery Notes and Shipments (U8982 US)*

### How to read this document

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

### Dynamic cross-docking

In LN, dynamic *cross-docking* enables users to create cross-dock orders and cross-dock order lines at an ad hoc basis. Changes to the cross-dock order and cross-dock order lines, including cancelation, can be done at various moments in the cross-docking process. LN can also automatically create cross-dock orders and/or a cross-dock order lines.

#### Pull system

Dynamic cross-docking supports a pull system. The cross-docking process is initiated by creating a cross-dock order for an *outbound-order line*. For this cross-dock order, cross-dock order lines can be created. The cross-dock order lines are basically *inbound-order lines*. The outbound order line serves as cross-dock order, while the inbound order lines serve as the cross-dock order lines. The outbound order lines and inbound order lines are linked to each other by creating cross-dock orders and cross-dock order lines. In this way, cross-docking is initiated from the outbound order line and the goods are pulled from the *receipt location* to the *staging location*. Users can also initiate cross-docking from the receipt line or inbound order line. However, a cross-dock order/outbound order line is required to link the inbound order line to.

#### Special scenarios

- One inbound order line can fulfill multiple cross-dock orders, that is, for a single inbound order line, multiple cross-dock order lines for multiple cross-dock orders can be created. ( Example 1)
- Multiple inbound order lines can fulfill a single cross-dock order. ( Example 2)

#### Example 1

Sales order line A, 100 pcs.; sales order line B, 75 pcs.; expected purchase order C, 200 pcs.

For sales order A, create cross-dock order #1 with a cross-dock order line for 100 pcs., corresponding with purchase order C.

For sales order B, create cross-dock order #2 with a cross-dock order line for 75 pcs., also corresponding with purchase order C.

| Sales Order | ps  | Cross-dock Order | Cross-dock Order Line | ps  | Purchase Order | ps  |
|-------------|-----|------------------|-----------------------|-----|----------------|-----|
| A           | 100 | #1               | #11                   | 100 | C              | 200 |
| B           | 75  | #2               | #21                   | 75  | C              | 200 |

The 25 pcs. remaining will not be cross-docked.

### Example 2

Sales order line A, 100 pcs.; expected purchase orders B, C and D, 40 pcs. each.

For sales order A, create a single cross-dock order for 100 pcs., with two cross-dock order lines for 40 pcs. each, and one cross-dock order line for 20 pcs.

| Sales Order | ps  | Cross-dock Order | ps  | Cross-dock Order Line | ps | Purchase Order | ps |
|-------------|-----|------------------|-----|-----------------------|----|----------------|----|
| A           | 100 | #1               | 100 | #11                   | 40 | B              | 40 |
|             |     |                  |     | #12                   | 40 | C              | 40 |
|             |     |                  |     | #13                   | 20 | D              | 40 |

The 20 pcs. remaining can either be linked to another cross-dock order, or will not be cross-docked.

## Dynamic cross-docking with excess inventory

This topic explains the processing of the following when inventory is available:

- *Cross-dock order*
- *outbound advice*

After you create a cross-dock order, you can generate an outbound advice for the remaining part of the ordered quantity (the quantity for which cross-dock order is not generated). When you have to generate an outbound advice for the ordered quantity of an outbound order line, you must first cancel or partially cancel the cross-dock order. You may want to generate an outbound advice because inventory becomes available due to the following reasons:

- Adjustment order
- Cycle counting
- Unblocking of inventory

The cross-dock order is automatically canceled (completely or partially) only if the **Cancel Cross-dock Orders when Inventory Can Be Advised** parameter is selected in the **Inventory Handling Parameters (whinh0100m000)** session.

Cross dock orders are automatically canceled or can be partially canceled based on the inventory availability. The possible scenarios are explained below:

- When there is no inventory available, then the related cross-dock order is not canceled.
- When there is inventory available for the outbound order line and there is a related cross-dock order without cross-dock order lines, the cross-dock order is canceled completely, if the value of the **Cancel Cross-dock Orders when Inventory Can Be Advised** parameter is **Open Cross-dock Orders Or Open and Planned Cross-dock Orders**.

When sufficient inventory is not available to completely fulfill the ordered quantity, the requested cross-dock order quantity is decreased with the quantity that is needed to make the advice possible.

- When there is available inventory for an outbound order line and there is a related cross-dock order with cross-dock order lines, the cross-dock order is canceled partially if the value of the **Cancel Cross-dock Orders when Inventory Can Be Advised** parameter is **Open and Planned Cross-dock Orders**. When cross dock orders are canceled partially, the requested cross-dock order quantity is decreased to a quantity that is equal to the planned quantity of the cross-dock order.

**Note** The requested cross-dock order quantity cannot be decreased if it is equal to the total quantity of the cross-dock order lines, and no outbound advice can be generated.

When the value of the **Cancel Cross-dock Orders when Inventory Can Be Advised** parameter is **Never** or **Open Cross-dock Orders**, the cross-dock orders are not canceled



## Chapter 2: Cross-Docking Process

### Cross-docking process

In Warehousing, *cross-docking* comprises the following steps:

#### 1 Creation of a cross-dock order

Cross-dock orders can be created manually, in batch, or generated automatically by LN:

- Manually  
In the **Cross-dock Orders (whinh6100m000)** session, enter an outbound order line, the requested cross-dock quantity and unit. A cross-dock order ID is generated based on the number group and series. You can optionally enter a *user priority* and a staging location, to which the goods will be cross-docked.
- In batch  
Use the **Generate Cross-dock Orders (whinh6200m000)** session to generate a range of cross-dock orders.
- Automatically
  - a** In the **Inventory Handling Parameters (whinh0100m000)** session and the **Warehouses (whwmd2500m000)** session, make sure the **Dynamic Cross-docking** check box is selected.
  - b** In the **Item Data by Warehouse (whwmd2110s000)** session, select either or both of the following check boxes:
    - **Generate Cross-dock Order when Releasing Order to Warehousing**
    - **Generate Cross-dock Order for Outbound Advice Shortage**

A newly created cross-dock order receives the status **Open**.

#### 2 Creation of cross-dock order lines

Cross-dock order lines can be created manually, in batch, or generated automatically LN:

- Manually  
In the **Cross-dock Orders (whinh6100m000)** session, on the *appropriate* menu, choose **Cross-dock Order Lines**. In the **Cross-dock Order Lines (whinh6110m000)** session, enter an inbound order line, the planned cross-dock quantity and unit.
- In batch  
Use the **Generate Cross-dock Orders (whinh6200m000)** session to generate a range of cross-dock order lines.
- Automatically
  - a** In the **Inventory Handling Parameters (whinh0100m000)** session and the **Warehouses (whwmd2500m000)** session, make sure the **Dynamic Cross-docking** check box is selected.

- b** In the **Item Data by Warehouse (whwmd2110s000)** session, select the **Generate Cross-dock Order Lines when Confirming Receipt** check box.

### 3 Approving cross-dock order lines

Cross-dock order lines must be approved before inbound advice takes place; no cross-docking will be carried out for unapproved cross-dock order lines. You can approve cross-dock order lines manually, in a batch process, or automatically:

- Manually
  - To approve a single cross-dock order line, in the **Cross-dock Order Lines (whinh6110m000)** session, on the *appropriate* menu, choose **Change Status to**, and then **Approved**.
  - To approve all cross-dock order lines for a cross-dock order, in the **Cross-dock Orders (whinh6100m000)** session, select the appropriate cross-dock order and, on the *appropriate* menu, choose **Approve Cross-dock Order Lines**.
- In batch

Use the **Approve Cross-dock Order Lines (whinh6210m100)** session to approve a range of cross-dock order lines.
- Automatically
  - a** In the **Inventory Handling Parameters (whinh0100m000)** session and the **Warehouses (whwmd2500m000)** session, make sure the **Dynamic Cross-docking** check box is selected.
  - b** In the **Item Data by Warehouse (whwmd2110s000)** session, select the **Automatically Approve Cross-dock Order Lines** check box.

When a cross-dock order line is created and approved, the associated cross-dock order receives the status **Planned**.

### 4 Processing cross-dock order lines

- Receiving goods

On the warehousing receiving side, users can initiate cross-docking by generating cross-dock order lines during confirmation of receipt lines, based on the **Generate Cross-dock Order Lines when Confirming Receipt** setting in the **Item Data by Warehouse (whwmd2110s000)** session. Before confirm receipt takes place, however, users can overrule this setting by either selecting or clearing the **Cross-docking** check box in the **Warehouse Receipt (whinh3512m000)** session.
- Inbound advice

During generation of inbound advice, LN checks whether the receipt line must be cross-docked. If this is the case, the goods are advised for a staging location. If the **Cross-dock Unit** is less than the received quantity, only part of the receipt line is advised for a staging location, while the remainder is advised for a bulk or pick location. If, based on the **Inspection** field of the receipt line, inspection is required, the goods are first advised for the inspection location. If inbound advice is created for the receipt line and no inspections are required, the cross-dock order line status will be set to **Advised**. If inspections must be carried out first, the **Advised** status will be assigned when goods are advised after inspections. If an inbound advice is generated for an inbound order line that is linked to more than one cross-dock order, the goods are first advised for the cross-dock order with the highest priority.
- Inspections (inbound)

During inspection goods can be approved, destroyed, or rejected.
- Approving goods

When goods are approved they are ready to be advised.

- Destroying and/or rejecting goods

If goods are destroyed or rejected, and the remaining quantity is not enough for cross-docking, the **Cross-dock Unit** of the corresponding cross-dock order line is decreased. As a result, the cross-dock order requires some additional cross-dock order lines to compensate for this. If there are multiple cross-dock order lines for an inbound order line, the **Cross-dock Unit** of the cross-dock order line corresponding to the cross-dock order with the lowest priority will be decreased first. If the **Cross-dock Unit** of a cross-dock order line is completely destroyed and/or rejected, the cross-dock order line is canceled or closed. If the **Cross-docked Quantity** is greater than zero, it will be closed, otherwise canceled.

- Approvals (outbound inspections)

When a cross-dock order corresponds to an outbound order line for which approvals/outbound inspections are defined in the outbound procedure, these inspections are carried out during the inbound inspections of the corresponding inbound order lines/cross-dock order lines. This means that for an inbound order line with corresponding cross-dock orders lines, inbound inspections will take place if inbound and/or outbound inspections are required.

- Put Away/Confirm Storage List

The goods are put on the advised location. If this is a staging location, the goods were cross-docked. The **Cross-docked Quantity** of the cross-dock order line will be increased. The outbound advice procedure is completely skipped when cross-docking.

- Shipment

After the goods are put away, shipment and shipment lines are created. From here, the goods can be shipped. The cross-dock order receives the status **closed** when the outbound order line receives the status **Shipped**. If nothing was cross-docked, the cross-dock order will receive the status **Canceled**.

### Cross-docking settings

- The settings in the **Inventory Handling Parameters (whinh0100m000)** session are used as defaults for the corresponding settings in the **Warehouses (whwmd2500m000)** session.
- In turn, the settings in the **Warehouses (whwmd2500m000)** session are used as defaults for the corresponding settings in the **Item Data by Warehouse (whwmd2110s000)** session.
- Because LN only considers warehouse-item-specific settings, users can easily overrule general settings as required.

**Important:** To use dynamic cross-docking at warehouse-item level (**Item Data by Warehouse (whwmd2110s000)** session, **Dynamic Cross-docking** check box), you must first select the corresponding check boxes in the **Inventory Handling Parameters (whinh0100m000)** and **Warehouses (whwmd2500m000)** sessions.

- The **Cross-dock Restriction Definitions (whinh6150m000)** session is used to define *cross-dock restriction definitions*.
- The **Priority Definitions (whinh6120m000)** session is used to define either *cross-dock order priority definitions* or *planning priority rules*.

## Cross-docking and project pegging

If project pegging is implemented, a cross-dock order is based on a project peg line of an outbound order line. A cross-dock order can be created for each project peg line present for an outbound order line. Outbound project peg lines are maintained in the **Outbound Order Line Peg Distribution (whinh2690m000)** session.

Cross-dock order lines are based on inbound project peg lines. Inbound project peg lines are maintained in the **Inbound Order Line Peg Distribution (whinh2680m000)** session.

If automatic creation of cross-dock orders is implemented, a cross-dock order is generated when a project peg line is added to an outbound order line in case of inventory shortage. A cross-dock order is manually created by selecting a project peg line in the **Cross-dock Orders (whinh6100m000)** session.

When a cross-dock order is created, the project, element and activity of the outbound project peg line are used as matching criteria to find the inbound peg lines that are to fulfill the cross-dock order. The project pegs of the inbound and the outbound order lines must be identical.

The project, element and activity of an inbound project peg line are used as matching criteria to find the outbound peg line related to the cross-dock order to be fulfilled. Similar to unpegged order lines, an inbound order peg line can fulfill multiple cross-dock orders. The project pegs of the inbound and the outbound order lines must be identical.

### Example

Sales order SO1

Peg line 1, project PRJ1, activity ACT1, quantity 5 pieces

Peg line 2, project PRJ1, activity ACT2, quantity 3 pieces

Expected purchase order PO1

Peg line 1, project PRJ1, activity ACT2, quantity 3 pieces

Peg line 2, project PRJ1, activity ACT1, quantity 1 piece

Peg line 3, project PRJ1, activity ACT1, quantity 4 pieces

These cross-dock orders are created:

| Cross-dock order | Originating order | Outbound peg line | Activity | Status | Requested |
|------------------|-------------------|-------------------|----------|--------|-----------|
| CD1              | SO1               | 1                 | ACT1     | Open   | 5.00 pcs  |
| CD2              | SO1               | 2                 | ACT2     | Open   | 3.00 pcs  |

Cross-dock order CD1 is fulfilled by these cross-dock order lines:

| Cross-dock order line | Originating order | Inbound peg line | Activity | Status | Planned  |
|-----------------------|-------------------|------------------|----------|--------|----------|
| 10                    | PO1               | 2                | ACT1     | Open   | 1.00 pcs |
| 20                    | PO1               | 3                | ACT1     | Open   | 4.00 pcs |

Cross-dock order CD2 is fulfilled by these cross-dock order lines:

| Cross-dock order line | Originating order | Inbound peg line | Activity | Status | Planned  |
|-----------------------|-------------------|------------------|----------|--------|----------|
| 10                    | PO1               | 1                | ACT2     | Open   | 3.00 pcs |

### Creating project pegged cross-dock orders

The options, batch sessions, and manual processes used to create cross-dock orders with project peg lines are identical to those used to create cross-dock orders without project peg lines.

The difference is, that for a project pegged outbound order line, the cross-dock order is based on a project peg line instead of the outbound order line. Likewise, for a project pegged inbound order line, the cross-dock order line is based on a project peg line instead of the inbound order line.

In the **Cross-dock Orders (whinh6100m000)** and the **Cross-dock Order Lines (whinh6110m000)** sessions, you can select the project peg lines for which to manually create cross-dock orders or cross-dock order lines. In the **Generate Cross-dock Orders (whinh6200m000)** session, you can select ranges of project peg lines for which to create cross-dock orders or cross-dock order lines in batch.

When cross-dock orders are created for outbound project peg lines, the quantities to be cross-docked are calculated in this way:

To be cross docked quantity = ordered quantity – canceled quantity – advised quantity – cross-dock requested quantity + rejected quantity + expected not shipped quantity + not shipped quantity.

**Note:** If an inbound project peg line of an inbound order line is changed, any related cross-dock order lines are cancelled.

## Chapter 3: Cross-Docking Handling Units

### Handling units and cross-docking

In LN, *handling units* can be *cross-docked* if handling units are used in both the inbound and the outbound processes.

An inbound handling unit can be linked to various *cross-dock order lines*, and various inbound handling units can be used to fulfill an individual cross-dock order line.

If the item quantity to be cross-docked is lower than the handling unit quantity, the cross-dock quantity is taken from the handling unit and cross-docked anonymously (without handling units). If child handling units are present, the required number of child handling units is cross-docked.

If the cross-dock quantity is not equal to the quantities of one or more of the child handling units, the difference is taken from one of the child handling units and cross-docked anonymously. The handling unit is put away in inventory without the cross-docked quantities.

The handling units and anonymous items to be cross-docked are advised from a receipt location to a staging location.

#### Example

A receipt line contains a handling unit of type Pallet and five child handling units of type Box, each box containing 10 items X. To fulfill an *outbound-order line* for 47 items X, four of the child handling units (Boxes) are cross-docked, and 7 items X are taken from the fifth child handling unit. These items are cross-docked anonymously. The box now contains 3 items X and is put in inventory. For the receipt line, this inbound advice is created:

| Inbound Advice<br>(whinh3525m000) | From Handling<br>Unit | To Handling<br>Unit | Item quanti-<br>ty | From Loca-<br>tion | To Loca-<br>tion |
|-----------------------------------|-----------------------|---------------------|--------------------|--------------------|------------------|
| INB00001/1                        | HU010 Pallet          | HU011 Box           | 10 item X          | Receive A          | Staging B        |
| INB00001/2                        | HU010 Pallet          | HU012 Box           | 10 item X          | Receive A          | Staging B        |
| INB00001/3                        | HU010 Pallet          | HU013 Box           | 10 item X          | Receive A          | Staging B        |
| INB00001/4                        | HU010 Pallet          | HU014 Box           | 10 item X          | Receive A          | Staging B        |
| INB00001/5                        | HU010 Pallet          |                     | 7 item X           | Receive A          | Staging B        |
| INB00001/6                        | HU010 Pallet          | HU010 Pallet        | 3 item X           | Receive A          | Storage A        |

In INB00001/6, the child handling unit HU015 Box that actually contains the three items to be stored is displayed in the Handling Unit Tree.

Cross-docking is performed in warehouses both with and without location control.

The handling units and the anonymous quantity taken from the handling unit are cross-docked when the inbound advice is put away. If locations and inbound advice are not applicable, cross-docking is performed when the receipt of the handling unit is confirmed. If inbound inspections apply, cross-docking is performed when the approved quantity is put away in inventory.

### Unsplittable handling units

You can cross-dock unsplittable handling units if the entire handling unit can be cross-docked. Cross-docking part of the contents of such handling units is not allowed. Handling units can be split up if the Splittable check box is selected in the Handling Units (whwmd5130m000) session.

### Projected shipments

If projected shipments and projected handling units are used, the application closes the received handling units. The item quantities are cross-docked anonymously. The handling units of the projected shipments are filled up with the cross-docked item quantities.

To use projected shipments, select the Projected Shipments in use check box in the Inventory Handling Parameters (whinh0100m000) session. For the relevant order types, select the Projected Shipments in use check box in the Warehousing Order Types (whinh0110m000) session.

To automatically generate projected shipments, select the Generate Projected Shipments Automatically check box in the Warehousing Order Types (whinh0110m000) session. If this check box is cleared,, projected shipments are generated using the Generate Projected Shipments (whinh4230m200) session.

Using the Creation of Projected Shipments field of the **Warehouses (whwmd2500m000)** session, you can specify that handling units must be generated for projected shipments. Handling units are generated for projected shipments to enable outbound labels to be printed when the items are received from production.

### Reuse of cross-docked handling units

Cross-docked handling units (such as the four Boxes of the previous example) are reused for the shipment lines generated for the cross-dock order lines if the reuse criteria are met. If not, the handling units are removed and new handling units are generated for the shipment lines.

## Cross-docking handling units and location control

In warehouses without *locations*, *inbound advice* is not mandatory. In location-controlled warehouses, inbound order lines that must be cross-docked are advised to a staging location. When the receipt is confirmed, the cross-dock order lines are created. If inbound advice is defined as an automatic activity in the warehousing

procedure, the inbound advice lines are also created. Otherwise, the user must manually create the inbound advice lines.

A handling unit is present on multiple inbound advices or multiple advice lines of an inbound advice when part of a handling unit is advised to a staging location to be cross-docked and the remainder is advised to a storage location.

### Example

Receipt line 00010 contains handling unit HU00001, which contains 50 items A. Outbound order line 00101 lists 20 items A.

To fulfill outbound order line 00101, 20 items A must be cross-docked because item A is not present in inventory. This is accomplished by removing 20 items A from HU00001 and cross-docking these items without handling units to outbound order line 00101, and advising HU00001 with the remaining items A to the storage location:

| Inbound advice | From Handling Unit | To Handling Unit | Item quantity | From Location | To Location |
|----------------|--------------------|------------------|---------------|---------------|-------------|
| INB00001/1     | HU00001            |                  | 20 item A     | Receive A     | Staging B   |
| INB00001/2     | HU00001            | HU00001          | 30 item A     | Receive A     | Storage A   |

If the Confirm Picking check box is selected for the relevant warehouses in the **Warehouses (whwmd2500m000)** session, handling units are generated for the shipment line.

## Cross-docking handling units and inbound advice

If a user removes an inbound advice linked to a cross-docking order line, the item quantity of the removed advice line is added to the item quantity that is advised to the storage location. If the advice is subsequently put away in inventory, the linked cross-dock order line is canceled. A new cross-dock order line must be created to fulfill the demand.

### Example

These outbound order lines are present, for which no inventory is available:

| Order          | Item quantity | Package definition |
|----------------|---------------|--------------------|
| Sales S0001/10 | 20 item A     | PDef01             |
| Sales S0002/10 | 30 item A     | PDef01             |
| Sales S0003/10 | 40 item A     | -                  |

For these order lines, cross-dock orders are created based on this inbound order line:



| Order             | Item quantity | Package definition |
|-------------------|---------------|--------------------|
| Purchase P0001/10 | 150 item A    | PDef01             |

When the purchase order is received, handling unit HU00123 containing 150 item A is created. When the receipt of the purchase order is confirmed, these cross-dock order lines and inbound advice lines are created:

| Cross-dock order line | Inbound advice | From Handling Unit | To Handling Unit | Item quantity | From Location | To Location |
|-----------------------|----------------|--------------------|------------------|---------------|---------------|-------------|
| P0001/10              | INB00001/1     | HU00123            |                  | 20 item A     | Receive A     | Staging B   |
| P0001/20              | INB00001/2     | HU00123            |                  | 30 item A     | Receive A     | Staging B   |
| P0001/30              | INB00001/3     | HU00123            |                  | 40 item A     | Receive A     | Staging B   |
|                       | INB00001/4     | HU00123            | HU00123          | 60 item A     | Receive A     | Storage A   |

A user removes P0001/20/INB00001/2. Consequently, the item quantity of INB00001/2 is added to HU00123, which is advised to storage:

| Inbound advice | From Handling Unit | To Handling Unit | Item quantity | From Location | To Location |
|----------------|--------------------|------------------|---------------|---------------|-------------|
| INB00001/1     | HU00123            |                  | 20 item A     | Receive A     | Staging B   |
| INB00001/3     | HU00123            |                  | 40 item A     | Receive A     | Staging B   |
| INB00001/4     | HU00123            | HU00123          | 90 item A     | Receive A     | Storage A   |

If the user decides to put away the handling unit quantity advised to storage before the quantities to be cross-docked are handled, the handling unit is put away and the reference to the handling unit is removed from the advice lines to be cross-docked. In the previous example, the result would be:

| Inbound advice | From Handling Unit | To Handling Unit | Item quantity | From Location | To Location |
|----------------|--------------------|------------------|---------------|---------------|-------------|
| INB00001/1     |                    |                  | 20 item A     | Receive A     | Staging B   |
| INB00001/3     |                    |                  | 40 item A     | Receive A     | Staging B   |
| INB00001/4     | HU00123            | HU00123          | 90 item A     | Receive A     | Storage A   |

Also, the cross-dock order line P0001/20 is canceled. To fulfill the demand of outbound order line Sales S0002/10, a new cross-dock order line must be created.

## Chapter 4: Cross-Dock Order Priorities

### Cross-dock order priority

LN assigns a priority to the cross-dock orders for an item. This priority indicates in which order cross-dock order lines must be generated for the cross-dock orders. First, cross-dock order lines will be created for cross-dock orders that have the highest priority. Next, the cross-dock order lines for cross-dock orders with subsequent priority will be generated.

The priority of a cross-dock order is determined by the *user priority* and the *system priority* which, in turn, is based on the *cross-dock order priority definition*.

#### Example 1

If, in the **Cross-dock Order Priorities (whinh6121m000)** session, the following priorities have been defined:

| Priori-ty | Field                      | Field Value | Sorting    |
|-----------|----------------------------|-------------|------------|
| 10        | Planned Delivery Date/Time | -           | Ascend-ing |
| 20        | Order Priority             | -           | Ascend-ing |

...and three cross-dock orders are created for outbound order lines A, B and C, the system priority will be as follows:

| Outbound Order | Planned Delivery Date       | Order Priority | System Priority |
|----------------|-----------------------------|----------------|-----------------|
| A              | April 11th 2006 05:00:00 PM | 80             | 1               |
| B              | April 12th 2006 05:00:00 PM | 9999           | 3               |
| C              | April 12th 2006 05:00:00 PM | 100            | 2               |

#### Example 2

If, in the **Cross-dock Order Priorities (whinh6121m000)** session, the following priorities have been defined:

| Priori-ty | Field | Field Value | Sorting |
|-----------|-------|-------------|---------|
|-----------|-------|-------------|---------|

|   |                     |                       |                       |
|---|---------------------|-----------------------|-----------------------|
| 1 | <b>Order Origin</b> | <b>Sales</b>          | <b>Not Applicable</b> |
| 2 | <b>Order Origin</b> | <b>Service</b>        | <b>Not Applicable</b> |
| 3 | <b>Order Origin</b> | <b>JSC Production</b> | <b>Not Applicable</b> |

...and three cross-dock orders are created for outbound order lines A, B and C, the system priority will be as follows:

| <b>Outbound Order</b> | <b>Order Origin</b>   | <b>System Priority</b> |
|-----------------------|-----------------------|------------------------|
| A                     | <b>Sales</b>          | 1                      |
| B                     | <b>Sales Schedule</b> | 3                      |
| C                     | <b>JSC Production</b> | 2                      |

### Example 3

If user priorities are added to Example 1, the resulting cross-dock order priority will be as follows:

| <b>Outbound Order</b> | <b>Planned Delivery Date</b> | <b>Order Priority</b> | <b>System Priority</b> | <b>User Priority</b> | <b>Cross-dock Order Priority</b> |
|-----------------------|------------------------------|-----------------------|------------------------|----------------------|----------------------------------|
| A                     | April 11th 2006 05:00:00 PM  | 80                    | 1                      | 2                    | 3                                |
| B                     | April 12th 2006 05:00:00 PM  | 9999                  | 3                      | 1                    | 2                                |
| C                     | April 12th 2006 05:00:00 PM  | 100                   | 2                      | 1                    | 1                                |

## Chapter 5: Planning Priority Rules

### Planning priority rules

If you use *direct material supply (DMS)*, you can define planning priority rules for cross-docking. These rules specify conditions that can be applied to a specific situation and a specific order, and result in a priority figure when applied to a specific order. Aggregating the priority figures of all applicable priority rules results in a planning priority, which in turn is used as the *system priority*.

If you use planning priority rules and create a new cross-dock order or update an existing cross-dock order, LN recalculates and updates the system priorities of all other cross-dock orders for the item and warehouse combination of the new or changed cross-dock order. Canceled cross-dock orders and closed cross-dock orders are then ignored.

#### Defining planning priority rules

To set up planning priorities, take the following steps:

- 1 In the **Priority Definitions (whinh6120m000)** session, create a priority definition code and a description.
- 2 On the *appropriate* menu, click **Planning Priority Rules**.
- 3 In the **Planning Priority Rules (whinh6122m000)** session, create planning priority rules.

#### Note:

- The number of rules is unlimited.
- Planning priority rules work according to a penalty system. You can define penalty points by rule. If a rule applies to a specific demand, the penalty points are assigned to that demand. The lesser penalty points a demand has, the higher its priority.
- Points can be assigned by means of a priority constant and by using a priority factor. The factor is first applied to the rule. Next, the constant is added to the resulting penalty points.
- If a rule has been defined for a specific field, but the rule does not apply to the demand, no penalty points are assigned. For example, a rule has been defined specifying that a demand will receive 10 points if that demand is not a rush order. No rule has been defined for a demand that is a rush order. As a result, if the demand is a rush order, the demand receives zero points. If the demand is not a rush order, the demand receives 10 points.
- If none of the rules applies to a specific demand instance, this demand receives the maximum number of penalty points, that is, the lowest priority.

#### Example

The following table shows an example of how you can specify planning priority rules.

| Planning Priority Definition A    |                     |                          |                |            |          |           |                 |                   |
|-----------------------------------|---------------------|--------------------------|----------------|------------|----------|-----------|-----------------|-------------------|
| Rule                              | Priority Field      | Order Type               | Field Value    | From Value | To Value | Time Unit | Priority Factor | Priority Constant |
| 1                                 | Not Applicable      | Forecast                 | --             | --         | --       | --        | --              | 200               |
| 2                                 | Order Priority      | Sales Order              | --             | 0          | 10000    | --        | 0               | 10                |
| 3                                 | Order Priority      | Sales Order              | --             | 10001      | 999999   | --        | 0               | 20                |
| 4                                 | Order Priority      | Not Applicable           | --             | 0          | 999999   | --        | 0               | 30                |
| 5                                 | Rush Order          | Not Applicable           | No             | --         | --       | --        | --              | 100               |
| 6                                 | Back Order          | Not Applicable           | No             | --         | --       | --        | --              | 20                |
| 7                                 | Shipping Constraint | Sales Order              | Order Complete | --         | --       | --        | --              | 10                |
| 8                                 | Shipping Constraint | Not Applicable           | notspecified   | --         | --       | --        | --              | 20                |
| 9                                 | Customer Priority   | Sales Order              | --             | 0          | 99       | --        | 1               | 0                 |
| 10                                | Customer Priority   | Not Applicable           | --             | 0          | 99       | --        | 0               | 50                |
| 11                                | Time Remaining      | Planned Production Order | --             | 0          | 5        | Days      | 0               | 10                |
| 12                                | Time Remaining      | Planned Production Order | --             | 6          | 99       | Days      | 1               | 5                 |
| 13                                | Time Remaining      | Not Applicable           | --             | 0          | 99       | Days      | 1               | 15                |
| 14                                | Lateness            | Planned Production Order | --             | 0          | 99       | Days      | -0.1            | 10                |
| 15                                | Lateness            | Not Applicable           | --             | 0          | 99       | Days      | -0.1            | 15                |
| 16                                | Warehouse           | Not Applicable           | A              | --         | --       | --        | --              | 0                 |
| 17                                | Warehouse           | Not Applicable           | notspecified   | --         | --       | --        | --              | 10                |
| 18                                | Order Quantity      | Not Applicable           | --             | 0          | 1000     | --        | -0.01           | 10                |
| <b>Note:</b> "--" = not available |                     |                          |                |            |          |           |                 |                   |

Explanation of **Priority Field** values:

- **Not Applicable**  
LN only considers the order type. You can only set a priority constant.

- **Order Priority**

Rules 2 and 3 are defined for order priorities for sales orders. Rule 4 is for other order types. You can set a priority constant and a priority factor. The default value for both fields is zero.

- **Rush Order**

To assign zero priority to rush orders, define a priority constant for non-rush orders. However, to prevent that no rule applies, and a high planning priority figure (= low priority) results, Infor recommends that you also add a rule for rush orders.

- **Back Order**

To assign zero priority to back orders, define a priority constant for non-back orders. However, to prevent that no rule applies, and a high planning priority figure (= low priority) results, Infor recommends that you also add a rule for back orders.

- **Shipping Constraint**

To assign higher priority to specific shipping constraints, define higher priority constants for other shipping constraints.

- **Customer Priority**

To restrict the figures within the ranges to meaningful numbers, define priority factors between 0 and 1.

- **Time Remaining**

Use a mix of priority constants and factors to prioritize time remaining for various order types.

- **Lateness**

Because a greater lateness should translate to a higher priority, the priority factor must, in this case, be negative.

- **Warehouse**

Specify a warehouse to assign the warehouse a higher or lower priority than other warehouses.

- **Order Quantity**

Because greater order quantities usually receive higher priority, the priority factor here must also be negative.

## Validating planning priority rules

Because rules can contradict each other, LN provides an option to validate the priority definition. You must validate a priority definition before you can use it. To make changes to a validated priority definition, you must first click the **Undo Validate** on the *appropriate* menu in the **Priority Definitions (whinh6120m000)** or the **Planning Priority Rules (whinh6122m000)** session.

Validation checks that are blocking:

- A higher order priority figure should result in a higher priority figure.
- A rush order usually results in a lower priority figure (higher priority) than no rush order.
- A greater time remaining usually results in a higher priority figure than less time remaining.
- A greater lateness usually results in a lower priority figure than shorter lateness.
- An overlap in defined ranges. This precludes the compilation of a priority.
- A gap in defined ranges. This precludes the compilation of a priority.

Validation checks that are not blocking:

- A back order usually results in a lower priority figure (higher priority) than no back order.

- Shipping constraints usually result in lower priority figures than no shipping constraints.
- Lateness usually has a lower priority figure than time remaining.
- A greater order quantity usually results in a lower priority figure.

### Using planning priority rules

You can define priority definitions on various levels:

- In the **Inventory Handling Parameters (whinh0100m000)** session. The priority definition you specify here is the default for every warehouse.
- In the **Warehouses (whwmd2500m000)** session. The priority definition you specify here becomes the default for each new item linked to that warehouse.
- In the **Item Data by Warehouse (whwmd2510m000)** session.

When prioritizing a number of demand orders, LN first uses a planning priority definition from the warehouse-item level. If no priority definition is specified on this level, LN uses the definition as specified on warehouse level. If no priority definition exists on this level either, LN uses the definition as specified in the parameters session. If no definition exists here either, no prioritizing takes place. LN calculates planning priorities whenever you run DMS planning.

When LN prioritizes demand based on priority definitions, all demand data for a specific item in the relevant warehouses is gathered, and a planning priority is calculated for each demand instance.

### Example

The following DMS example assumes that all demand is in the same warehouse-item combination, and for that reason use the same planning priority definition.

First, a number of orders with relevant attributes for the priority calculation is listed. Next, this section describes the calculation for each demand instance.

#### Demand

| # | Order Type               | Order Priority | Rush Order | Back Order | Shipping Constraint | Customer Priority | Time Remaining | Lateness | Warehouse | Order Quantity |
|---|--------------------------|----------------|------------|------------|---------------------|-------------------|----------------|----------|-----------|----------------|
| 1 | Forecast                 | -              | -          | -          | -                   | -                 | 20             | -        | A         | 50             |
| 2 | Sales Order              | 5000           | Yes        | -          | -                   | 10                | 5              | -        | B         | 50             |
| 3 | Sales Order              | 25000          | -          | Yes        | -                   | 20                | 2              | -        | B         | 100            |
| 4 | Sales Order              | 10000          | -          | 0          | Order Complete      | 10                | -              | 2        | A         | 200            |
| 5 | Service Order            | 20000          | -          | -          | -                   | 5                 | 1              | -        | B         | 100            |
| 6 | Service Order            | 5000           | -          | -          | -                   | 20                | -              | 4        | A         | 50             |
| 7 | Planned Production Order | 10000          | -          | -          | -                   | -                 | 2              | -        | A         | 100            |

## Demand

| # | Order Type               | Order Priority | Rush Order | Back Order | Shipping Constraint | Customer Priority | Time Remaining | Lateness | Warehouse | Order Quantity |
|---|--------------------------|----------------|------------|------------|---------------------|-------------------|----------------|----------|-----------|----------------|
| 8 | Planned Production Order | 20000          | -          | -          | -                   | -                 | -              | 3        | C         | 200            |

Based on the [planning priority definition example](#) on page 20, the following priorities are calculated:

| Order/Demand |                 |                 |                  |                  |                  |                 |                  |                  |
|--------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|------------------|------------------|
| Rule         | 1               | 2               | 3                | 4                | 5                | 6               | 7                | 8                |
| 1            | 200             | -               | -                | -                | -                | -               | -                | -                |
| 2            | -               | 10              | -                | 10               | -                | -               | -                | -                |
| 3            | -               | -               | 20               | -                | -                | -               | -                | -                |
| 4            | -               | -               | -                | -                | 30               | 30              | 30               | 30               |
| 5            | 100             | -               | 100              | 100              | 100              | 100             | 100              | 100              |
| 6            | 20              | 20              | -                | 20               | 20               | 20              | 20               | 20               |
| 7            | -               | -               | -                | 10               | -                | -               | -                | -                |
| 8            | 20              | 20              | 20               | -                | 20               | 20              | 20               | 20               |
| 9            | -               | 10*1            | 20*1             | 10*1             | -                | -               | -                | -                |
| 10           | 50              | -               | -                | -                | 50               | 50              | 50               | 50               |
| 11           | -               | -               | -                | -                | -                | -               | -                | -                |
| 12           | -               | -               | -                | -                | -                | -               | -                | -                |
| 13           | 20*1+15         | 5*1+15          | 2*1+15           | -                | 1*1+15           | -               | -                | -                |
| 14           | -               | -               | -                | -                | -                | -               | -                | -0.1*3+10        |
| 15           | -               | -               | -                | -                | -                | -               | -                | -                |
| 16           | 0               | -               | -                | 0                | -                | 0               | 0                | 0                |
| 17           | -               | 10              | 10               | -                | 10               | -               | -                | 10               |
| 18           | -0.01*50<br>+10 | -0.01*50<br>+10 | -0.01*100<br>+10 | -0.01*200<br>+10 | -0.01*100<br>+10 | -0.01*50<br>+10 | -0.01*100<br>+10 | -0.01*200<br>+10 |

Based on these outcomes, available supply is distributed in the following order:

- 1** Order 2 (rush order)
- 2** Order 4 (overdue)
- 3** Order 3 (back order)



- 4** Order 7
- 5** Order 6 (overdue)
- 6** Order 8 (overdue)
- 7** Order 5
- 8** Order 1 (forecast)

## Chapter 6: Cross-Docking Time Window

### Cross-docking time window

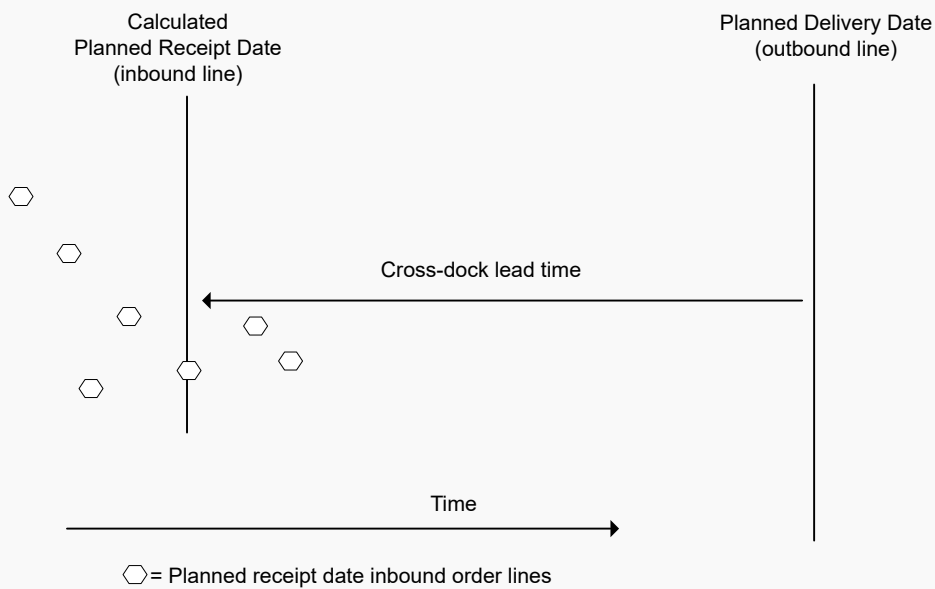
Cross-dock order lines that must be generated must be for inbound order lines that have a planned receipt date that tallies with the planned delivery date of the outbound order line, taking into account the *cross-dock lead time* that lies between these two dates. If the cross-dock lead-time is subtracted from the planned delivery date of the outbound order line, the result is the planned receipt date of inbound order lines that can be considered for linking to a cross-dock order.

Being expressed in seconds, an inbound order line's planned receipt date will never exactly match the planned delivery date of an outbound order line. Therefore, inbound order lines must be taken into account with a planned receipt date that is shortly before or after this calculated date. For this purpose, you can specify minimum and maximum time tolerances in the **Generate Cross-dock Orders (whinh6200m000)** session, which creates a time window for the planned receipt date. As a result, all inbound order lines that have a planned receipt date that is within this time window are taken into account for cross-dock order line creation. If you set both the minimum and maximum time tolerances to zero, LN ignores the time window.

---

#### Example

The following figure shows lead-time calculation without a time window.

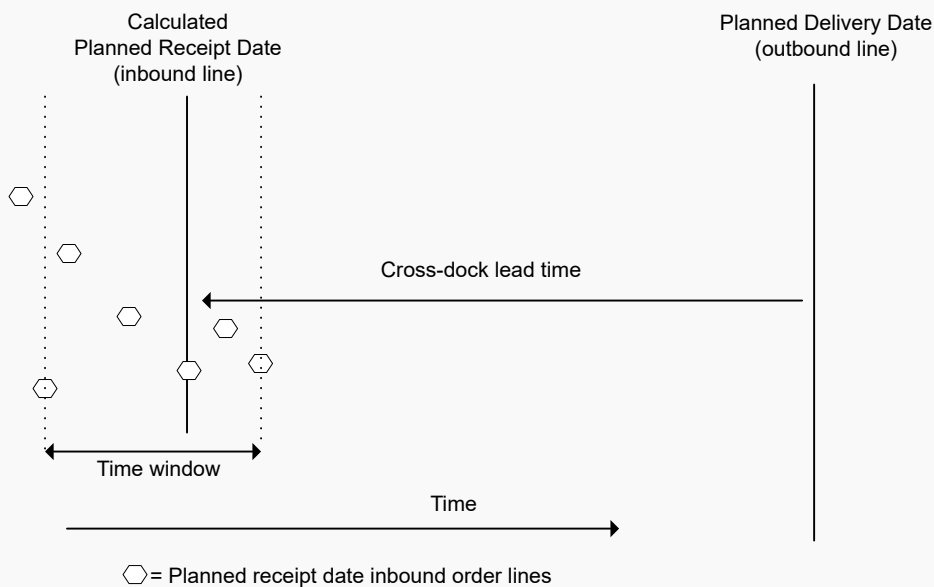


#### Explanation

- The cross-dock lead time is planned backward from the planned delivery date of the cross-dock order (= outbound order line) to obtain the calculated planned receipt date.
- The inbound order line that is received on this date/time (only one) is taken into account for creation of cross-dock order lines.

#### Example

The following figure shows lead-time calculation with a time window.



#### Explanation

- The vertical line to the left of the calculated planned receipt date indicates the minimum time tolerance, while the vertical line to the right of the calculated planned receipt date indicates the maximum time tolerance.
- In this case, other inbound order lines are taken into account as well for creation of cross-dock order lines. Some goods might be received before the calculated receipt date, others after the calculated receipt date:
  - Goods that will be received earlier can be cross-docked and shipped earlier, or will have to wait at the receiving or staging location to be shipped on the planned delivery date.
  - Goods that will be received after the calculated receipt date, but within the time window, will also be cross-docked for this cross-dock order. These goods are already too late for shipment, but still cross-docking is faster than in-bounding and out-bounding the goods.
- Inbound order lines with a planned receipt date that falls outside the time window will not be taken into account for this cross-dock order, but might be taken into account for another cross-dock order. This other cross-dock order is for another outbound order line that might have another planned delivery date. This results in another calculated planned receipt date and a shifted time window.

The order in which inbound order lines are linked to a cross-dock order is as follows:

- 1** Inbound order lines that were already received.  
The time window is not taken into account.
- 2** Remaining inbound order lines.  
These lines are linked according to their planned receipt dates. Inbound order lines with the earliest planned receipt dates will be linked first. Here, the time window is taken into account.

#### Note:

- Your line of business determines how time tolerances are set. Best results will be achieved by trial and error.
- Time tolerances can be expressed in hours or days.

## Chapter 7: Force Cross-Docking Range

### Force cross-docking range

#### Introduction

In the **Item Data by Warehouse (whwmd2510m000)** session, you can specify force cross-dock minimum and maximum quantities, which enable you to force cross-docking whenever a quantity is received that lies within the range specified.

#### Impact of force cross-docking

- If the force cross-dock minimum and maximum quantities are both set to zero, LN does not try to force cross-docking of the received quantity.  
For DMS, this means that LN always first tries to supply from inventory if **DMS on Inventory** is set to **Receipt and Outbound**. If demand exceeds available inventory, LN cross-docks the received quantity to meet remaining demand.
- If you set the force cross-dock maximum quantity to the maximum and the force cross-dock minimum quantity to zero, LN always first tries to cross-dock the received goods.  
For DMS, this means that first the received quantity is used to meet demand. If demand exceeds the received quantity, the remaining quantity is supplied from inventory, if **DMS on Inventory** is set to **Receipt and Outbound**.  
The same applies when the force cross-dock maximum and minimum quantities are set to specific values, and the received quantity falls within this range.

#### Force cross-docking in a DMS environment

Depending on the force cross-dock quantities, LN first assigns either the received quantity or the on-hand quantity. The following examples assume that you specified a force cross-docking range of zero to 20.

##### Example 1

|                                            |         |
|--------------------------------------------|---------|
| <b>Item</b>                                | X       |
| <b>Warehouse</b>                           | WH1     |
| <b>Received Quantity in Inventory Unit</b> | 10 pcs. |
| <b>Inventory on Hand</b>                   | 15 pcs. |

The received quantity is 10 and, therefore, in the assumed range. As a result, the received quantity will be assigned first, and then the on-hand quantity. Distribution in the DMS session is as follows:

| Priori-ty | Date      | Demand      | W | Short-age | Assigned Received Quanti-ty | Assigned Invento-ry |
|-----------|-----------|-------------|---|-----------|-----------------------------|---------------------|
| 106       | 14-4-2005 | Sales S4    | 2 | 2         | 2                           |                     |
| 203       | 11-4-2005 | Sales S1    | 1 | 10        | 8                           | 2                   |
| 205       | 13-4-2005 | Sales S3    | 2 | 5         |                             | 5                   |
| 212       | 15-4-2005 | Transfer T2 | 1 | 5         |                             | 5                   |
| 500       | 20-4-2005 | Forecast F1 | 2 | 20        |                             | 3                   |

### Example 2

|                                            |         |
|--------------------------------------------|---------|
| <b>Item</b>                                | X       |
| <b>Warehouse</b>                           | WH1     |
| <b>Received Quantity in Inventory Unit</b> | 25 pcs. |
| <b>Inventory on Hand</b>                   | 15 pcs. |

The received quantity is 25 and, therefore, outside the assumed range. As a result, the on-hand quantity will be assigned first, and then the received quantity. Distribution in the DMS session is as follows:

| Priori-ty | Date      | Demand      | W | Short-age | Assigned Received Quanti-ty | Assigned Invento-ry |
|-----------|-----------|-------------|---|-----------|-----------------------------|---------------------|
| 106       | 14-4-2005 | Sales S4    | 2 | 2         |                             | 2                   |
| 203       | 11-4-2005 | Sales S1    | 1 | 10        |                             | 10                  |
| 205       | 13-4-2005 | Sales S3    | 2 | 5         | 2                           | 3                   |
| 212       | 15-4-2005 | Transfer T2 | 1 | 5         | 5                           |                     |
| 500       | 20-4-2005 | Forecast F1 | 2 | 20        | 3                           |                     |

The remaining received quantity is placed in stock.

**Note:** On occasion, all demand can be supplied from inventory and the entire received quantity is placed in stock.

#### **Force cross-docking in a non-DMS environment**

The force cross-docking range is closely linked to the cross-docking time fence and the setting of the **Generate Cross-dock Order Lines when Confirming Receipt** option, which is also defined in the **Item Data by Warehouse (whwmd2510m000)** session.

If you set a force cross-docking range, and the received quantity falls within this range, LN performs the following steps:

- 1** Tries to cross-dock the received goods as much as possible. LN looks for all demand (outbound order lines) for the received item in the warehouse where the goods are received.  
LN first looks for open cross-dock orders for which cross-dock order lines can be created.
- 2** If goods remain to be cross-docked, LN then looks for outbound order lines that do not yet have a cross-dock order.
- 3** If one or more is found, LN sorts these lines according to the *planning priorities* or *cross-dock order priorities* used, and creates cross-dock orders and cross-dock order lines as required.
- 4** LN repeats these steps until the entire received quantity is processed or until no more demand can be found.

**Note:**

- LN also performs the previous steps if the **Generate Cross-dock Order Lines when Confirming Receipt** check box is cleared.
- If the **Generate Cross-dock Order Lines when Confirming Receipt** check box is selected, and no force cross-docking range is set, LN still tries to create cross-dock order lines for existing cross-dock orders. However, LN will not create new cross-dock orders.
- If a time fence has been set, the restrictions imposed by the time fence must also be met.



## Chapter 8: Cross-Dock Restrictions

### Cross-dock restrictions

For cross-docking, you can define restriction rules. LN uses the set of rules included in a restriction definition to determine whether to create cross-dock orders. The rules are checked one after the other. If a valid condition is met, no cross-dock orders will be created. If no rule applies, LN permits the creation of cross-dock orders.

When trying to determine whether to create cross-dock orders, LN first uses a restriction definition from the warehouse-item level. If no restriction definition is specified on this level, LN uses the definition as specified on warehouse level. If no restriction definition exists on this level either, LN uses the definition as specified in the parameters session. If no restriction definition exists here either, this implies that no restrictions apply, and that the cross-dock order can be generated.

#### Example

| Cross-dock restriction definition: CDRD1 |              |            |                         |                |
|------------------------------------------|--------------|------------|-------------------------|----------------|
| Rule                                     | Order Origin | Order Type | Supply System           | Shortage       |
| 1                                        | Sales        | SP1        | None                    | Not Applicable |
| 2                                        | None         |            | Order Controlled/Single | No             |
| 3                                        | Transfer     |            | None                    | Yes            |

Explanation For the following orders, no cross-dock orders must be generated:

- Sales orders with order type SP1 and no shortage occurring.
- JSC production order with warehouse order type P01 and supply method **Order Controlled/Single**.
- Transfer order with order type T01 and a shortage occurring.

For the following orders, cross-dock orders can be generated:

- Sales order with order type SP2 and no shortage occurring.
- JSC production order with warehouse order type P01 and supply method **Order Controlled/Batch**.
- Transfer order with order type T01 and no shortage occurring.

## Chapter 9: Impact of Cross-Docking Settings

### Impact of cross-docking settings

#### Introduction

The impact of the cross-docking time fence, force cross-docking range, and cross-dock restrictions depends on whether these settings are used in a DMS environment or a non-DMS environment.

#### Impact in a DMS environment

The following table summarizes the impact of cross-docking settings on receipts if you use **DMS upon Receipt**. The Result column describes what happens during a DMS run.

| Setting: |                                                                                         |    |   | Result                                                                                                                                                                                                                                                                                                                          |
|----------|-----------------------------------------------------------------------------------------|----|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CR       | FC                                                                                      | TF | R |                                                                                                                                                                                                                                                                                                                                 |
| N        | N                                                                                       | N  | Y | Cross-dock orders and cross-dock order lines cannot be generated if a cross-dock restriction is met.                                                                                                                                                                                                                            |
| N        | Y                                                                                       | Y  | N | Cross-dock orders and cross-dock order lines are only generated before inventory is used to supply demand, if the force cross-docking range and the time fence are met.<br>If demand remains after goods are supplied from inventory, cross-dock orders and cross-dock order lines are only generated if the time fence is met. |
| N        | Y                                                                                       | N  | N | Cross-dock orders and cross-dock order lines are only generated before inventory is used to supply demand, if the force cross-docking range is met.<br>If demand remains after goods are supplied from inventory, cross-dock orders and cross-dock order lines are generated.                                                   |
| N        | N                                                                                       | Y  | N | Cross-dock orders and cross-dock order lines are only generated if the time fence is met.                                                                                                                                                                                                                                       |
| N        | N                                                                                       | N  | N | In contrast with a non-DMS environment, cross-dock orders and cross-dock order lines are always generated.<br>If demand remains after goods are supplied from inventory, cross-dock orders and cross-dock order lines are generated.                                                                                            |
| CR       | <b>Generate Cross-dock Order Lines when Confirming Receipt</b> (not applicable for DMS) |    |   |                                                                                                                                                                                                                                                                                                                                 |
| -        |                                                                                         |    |   |                                                                                                                                                                                                                                                                                                                                 |

**FC Force Cross-docking Range** set:

- Yes = Range is, for example, from 10 to 100.
- No = Range is from zero to zero.

**TF Cross-docking Time Fence** set:

- Yes = Minimum tolerance is, for example, 10 hours and maximum tolerance is 15 hours.
- No = Minimum and maximum tolerance have value zero.

**RA Restriction Definition** set (Yes/No).

-

**Impact in a non-DMS environment**

The following table summarizes the impact of cross-docking settings on receipts of items that are not **DMS Supplied**, in combination with the **Generate Cross-dock Order Lines when Confirming Receipt** setting. The Result column describes what happens during confirm receipt (line).

| Setting: |    |    |    | Result                                                                                                                                                                                       |
|----------|----|----|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CR       | FC | TF | RA |                                                                                                                                                                                              |
| N        | N  | N  | Y  | Cross-dock orders and cross-dock order lines cannot be generated if a cross-dock restriction is met.                                                                                         |
| Y        | Y  | Y  | N  | Cross-dock orders are only generated if the force cross-docking range and the time fence are met. Cross-dock order lines are only generated during confirm receipt if the time fence is met. |
| Y        | Y  | N  | N  | Cross-dock orders are only generated if the force cross-docking range is met. Cross-dock order lines are always generated during confirm receipt.                                            |
| Y        | N  | Y  | N  | No cross-dock orders are generated. Cross-dock order lines are only generated during confirm receipt if the time fence is met.                                                               |
| Y        | N  | N  | N  | No cross-dock orders are generated. Cross-dock order lines are always generated during confirm receipt.                                                                                      |
| N        | Y  | Y  | N  | Cross-dock orders and cross-dock order lines are only generated if the force cross-docking range and the time fence are met.                                                                 |
| N        | Y  | N  | N  | Cross-dock orders and cross-dock order lines are only generated if the force cross-docking range is met.                                                                                     |
| N        | N  | Y  | N  | These settings are not possible.                                                                                                                                                             |
| N        | N  | N  | N  | In contrast with a DMS environment, no cross-dock orders or cross-dock order lines are generated.                                                                                            |

**CR Generate Cross-dock Order Lines when Confirming Receipt** (Yes/No).

-

---

**FC Force Cross-docking Range** set:

- - Yes = Range is, for example, from 10 to 100.
  - No = Range is from zero to zero.

---

**TF Cross-docking Time Fence** set:

- - Yes = Minimum tolerance is, for example, 10 hours and maximum tolerance is 15 hours.
  - No = Minimum and maximum tolerance have value zero.

---

**RA Restriction Definition** set (Yes/No).

-

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## Chapter 10: Frequently Asked Questions

### What happens if...

The following table describes what happens in various *cross-docking* situations.

| What happens if...                                                                         | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ...the <i>inbound advice</i> is not part of the <b>Receipt Procedure</b> ?                 | The goods are immediately cross-docked after confirm receipt. <i>Cross-dock order lines</i> receive the status <b>Staged</b> when confirming the receipt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ...the put away or <i>storage list</i> is not part of the <b>Receipt Procedure</b> ?       | The cross-dock order line receives the status <b>Staged</b> after the inbound advice is created (put away is done automatically).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ...the order type does not include a <b>Shipment Procedure</b> (empty shipment procedure)? | The goods are automatically shipped after put away or confirm storage list. The <i>cross-dock order</i> receives the status <b>Closed</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ...the outbound order origin is <b>JSC Production</b> ?                                    | The outbound procedure will be skipped; the goods already leave the warehouse at the moment of put away inbound advice or confirm storage list.<br>The cross-docking procedure will be even faster if the inbound procedure only involves the Receipts step. The goods will then immediately leave the warehouse when confirming the receipt line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ...my warehouse is a non- <i>location-controlled</i> warehouse?                            | In this case, cross-docking is not meant to move the goods from a <i>receiving location</i> to a <i>staging location</i> . Instead, an inbound order line is just linked to an outbound order line by creating cross-dock orders and cross-dock order lines. As a result, the Generate/Release Outbound Advice, Generate Picking List, and Confirm Pick List steps are skipped. This is an administrative action.<br>When the goods are received in the warehouse (confirm receipt), the goods are placed somewhere in the warehouse, but the cross-dock order line corresponding to the received inbound order line is cross-docked. The outbound order line corresponding to the cross-dock order is ready to be shipped. No outbound advice needs to be generated, and releasing and <i>picking</i> can be skipped. When the goods are shipped, the cross-dock order is closed. In short, cross-docking in a non- <i>location-controlled</i> warehouse comprises just two steps: Confirm Receipt (line) and Confirm Shipment (line). Additionally, inbound approvals can be done, as in <i>location-controlled</i> warehouses. |

| What happens if...                             | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ...my item is a non-location-controlled item?  | The same applies as for a non-location-controlled warehouse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ...a released <i>issue</i> order is changed?   | <p>The corresponding cross-dock order will be canceled when a released issue order is changed. LN will handle the issue order as being released again, and will check the <b>Generate Cross-dock Order when Releasing Order to Warehousing</b> setting at warehouse-item level. If enabled, a new cross-dock order is created.</p> <p><b>Note:</b> You can only change an issue order, if no outbound advice has been generated yet, and, in case of cross-docking, if no inbound advice has been generated for the cross-dock order line(s).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ...a released <i>receipt</i> order is changed? | When a line of type <b>Receipt</b> is changed (for example, a purchase order line), the related cross-dock order lines are canceled. No new cross-dock order lines are created.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ...a <i>back order</i> is created?             | <p>After goods have been cross-docked and the corresponding outbound order line receives the status <b>Shipped</b>, the cross-dock order is closed or canceled. The <b>Requested Quantity to Cross-dock in Cross-dock Unit</b> of the cross-dock order can be:</p> <ul style="list-style-type: none"> <li>• completely cross-docked,</li> <li>• partly cross-docked,</li> <li>• not cross-docked at all.</li> </ul> <p>LN will not automatically create a new cross-dock order and cross-dock order lines for the back-order quantity. For a back-order, a new cross-dock order must be created manually, or, depending on the parameter settings, will be generated automatically:</p> <ul style="list-style-type: none"> <li>• During release of the back-order to warehousing.</li> <li>• During Generate Outbound Advice.</li> </ul> <p><b>Note:</b> A cross-dock order may also be never created again, because in the meantime goods can be taken out of the warehouse (from a <i>bulk location</i> or a <i>pick location</i>).</p> |

## Chapter 11: Troubleshooting

- I cannot enable cross-docking in the Warehouse - Item (whwmd2510m000) session.
- I created a cross-dock order and a cross-dock order line, but received goods are still not cross-docked. Goods are in bounded instead.
- I expected a cross-dock order to be created when releasing my order to warehousing, but this does not happen.

### I cannot enable cross-docking in the Warehouse - Item (whwmd2510m000) session.

Make sure to select the **Dynamic Cross-docking** check boxes in the following sessions:

- **Inventory Handling Parameters (whinh0100m000)**
- **Warehouses (whwmd2500m000)**
- **Item - Warehousing (whwmd4500m000)**

### I created a cross-dock order and a cross-dock order line, but received goods are still not cross-docked. Goods are in bounded instead.

The cross-dock order line must be approved before inbound advice. This can be done in several ways:

- Approve the order line manually in the **Cross-dock Order Lines (whinh6110m000)** session.
- Approve the order line using the **Approve Cross-dock Order Lines (whinh6210m100)** session.
- Select the **Automatically Approve Cross-dock Order Lines** check box in the **Item Data by Warehouse (whwmd2510m000)** session.

The following also applies:

- Specific outbound lot must match inbound lot, when using lots in inventory.
- Outbound and inbound *effectivity unit* must match.
- Specific outbound serial must match inbound serial, when using serials in inventory.

- Inbound *package definition* must match outbound package definition, if package definition has been defined on the outbound line.
- Is the **Unit Binding** check box selected in the **Outbound Order Lines (whinh2120m000)** session?

I expected a cross-dock order to be created when releasing my order to warehousing, but this does not happen.

In the **Item Data by Warehouse (whwmd2510m000)** session, check the following settings and fields:



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