Infor LN User Guide for Purchase and Sales Schedules

Important Notices

Trademark Acknowledgements

Publication Information

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About this document

This document describes the process to set up purchase schedules and sales schedules. The purchase/sales schedule procedures and functions are also described.

Objective

This document describes how to set up and use purchase and sales schedules in LN.

Intended audience

This document is intended for persons in charge of purchase and sales schedules. The intended audience can include key users, implementation consultants, product architects, and support specialists.

Document summary

This table shows the chapters of this guide:

Chapter number	Content
Chapter 1	Purchase schedules
Chapter 2	Sales schedules

References

Use this guide as the primary reference for purchase and sales schedules. Use the current editions of these related references to research information that is not covered in this guide:

- ***User Guide for Purchase Contracts U9822 US***
  Use this guide to understand the purchase contract procedure.
- ***User Guide for Sales Contracts U9844 US***
  Use this guide to understand the sales contract procedure.
- ***User Guide for Automotive U9583 US***
  Use this guide to understand the functionality specific to the automotive industry.
- ***User Guide for Project Pegging U9777 US***
  Use this guide to understand the project pegging functionality.
- ***User Guide for Vendor Managed Inventory U9501 US***
  Use this guide to understand the vendor managed inventory functionality, including the use of consigned inventory.
- ***User Guide for Pricing U9179 US***
  Use this guide to understand the pricing functionality.
- ***User Guide for Material Pricing U9865 US***
  Use this guide to understand the material pricing functionality.

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 *Introduction*. To locate the referred section, please refer to the Table of Contents or use the Index at the end of the 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 the document.

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Chapter 1
Purchase schedules

1

General and master data

Overview of purchase schedule handling

A purchase schedule is a timetable of planned supply of materials. Purchase schedules support long-term purchasing with frequent deliveries and are usually backed by a purchase contract. All requirements for the same item, buy-from business partner, ship-from business partner, purchase office, and warehouse are stored in one schedule. Purchase schedules are used instead of standard purchase orders in cases where full visibility and time phasing of material requirement information is required. Therefore, purchase schedules provide a more detailed way to specify the delivery dates/times per item.

The following types of purchase schedules exist:

- **Push schedule**
  A list of time-phased requirements, generated by a central planning system, such as Enterprise Planning or Project that is sent to the purchase business partner. Push schedules contain both a forecast for the longer term and actual orders for the short term. A push schedule is a nonreferenced schedule.
- **Pull forecast schedule**
  A list of time-phased planned requirements, generated by Enterprise Planning, that is sent to the purchase business partner. Pull forecast schedules are only used for forecasting purposes. To order the items, a pull call-off schedule must be generated with the same schedule number as the pull forecast schedule. Similar to a push schedule, a pull forecast schedule is also a nonreferenced schedule.
- **Pull call-off schedule**
  A list of time-phased specific requirements of purchased items, triggered from Assembly Control, or Warehousing (KANBAN, Time-phased order point). A pull call-off schedule is a referenced schedule.

Purchase schedule master data

Before you can perform the purchase schedule procedure, you must specify the purchase schedule master data.

For more information, refer to:

- Purchase item data
- Purchase organizational data

Before you can create a purchase schedule, you must also:

1. Specify the following item data in the Items - General (tcibd0501m000) session:
   - Select the **Purchase Schedule in Use** check box.
   - Select the **Configurable** check box if you want to use configurable items on pull schedules.
   - Specify a purchase schedule type in the **Schedule Type** field, which can be of the type push or pull.
2. Set up a segment set as follows:
   a. Specify segments in the Schedule Segments (tdipu0115m000) session.
   b. Specify a segment set in the Schedule Segment Sets (tdipu0113m000) session.
   c. Add the segments to the segment set in the Segment Set - Segments (tdipu0114m000) session.

   For more information, refer to *Using segment sets (p. 10)*.
3. Specify patterns in the Patterns (tcccp0690m000) session.
4. Define the following parameters:
   - The fields on the **Schedules** tab of the Purchase Contract Parameters (tdpur0100m300) session.
   - The **Number Group for Purchase Orders** field in the Purchase Order Parameters (tdpur0100m400) session.
   - The purchase schedule related parameters that apply to an item and business partner combination in the Purchase Contract Line Logistic Data (tdpur3102m000) or Items - Purchase Business Partner (tdipu0110m000) sessions.
5. Store delivery patterns by warehouse, buy-from business partner/ship-from business partner and item in the Delivery Patterns by Warehouse / BP / Item (tdipu0124m000) session. Based on the combinations in this session, planned delivery moments can be generated in the Generate Planned Delivery Moments (tdipu0225m000) session.
6. Generate planned delivery moments in the Generate Planned Delivery Moments (tdipu0225m000) session to determine when an item can be delivered. The dates returned, listed in the Planned Delivery Moments (Shipment Based) (tdipu0125m000) and Planned Delivery Moments (Receipt Based) (tdipu0126m000) sessions, are used by Enterprise Planning for lead time offsetting.

Note

If the **Material Pricing in Procurement** check box is selected in the Material Price Parameters (tcmpr0100m000) session, after setting up the material pricing master data, LN can retrieve material price information for a schedule line.

Push schedule procedure

The following steps are or must be completed in the push schedule procedure:

1. Generate a schedule header and lines
2. Regenerate schedule lines
3. Generate a purchase release (line)
4. Approve the purchase release line
5. Print the purchase release
6. Insert authorizations
7. Insert receipt details
8. Insert cumulatives
9. Reset the cumulatives and authorizations
10. Update history and turnover data

For more information, refer to *Push schedules (p. 13)*.

Pull forecast schedule procedure

Based on the parameters and triggers, the following steps are completed in the pull forecast schedule procedure:

1. Generate a schedule header and lines
2. Regenerate schedule lines
3. Generate a purchase release
4. Approve the purchase release
5. Print the purchase release
6. Insert authorizations.
7. Generate a pull call-off schedule

For more information, refer to *Pull forecast schedules (p. 15)*.

Pull call-off schedule procedure

Based on the parameters and triggers, the following steps are completed automatically in the pull call-off schedule procedure:

1. Generate a schedule header
2. Generate schedule lines.
3. Generate a purchase release
4. Print the purchase release
5. Insert receipt details
6. Insert cumulatives

7. Reset the cumulatives and authorizations
8. Update history and turnover data

For more information, refer to *Pull call-off schedules (p. 20)*.

Using planned delivery moments

In purchase scheduling, planned delivery moments must be generated for a combination of item, buy-from business partner, ship-from business partner, and warehouse. These moments are used by Enterprise Planning for lead-time offsetting.

Note

Planned delivery moments can be generated in the Generate Planned Delivery Moments (tdipu0225m000) session.

When Enterprise Planning calls Procurement for planned delivery moments for a combination of item, buy-from business partner/ship-from business partner, and warehouse, LN carries out the following steps:

1. Searches the Delivery Patterns by Warehouse / BP / Item (tdipu0124m000) session to retrieve the applicable delivery pattern. LN searches in the following order:
   a. By warehouse, buy-from business partner, ship-from business partner and item.
   b. By warehouse, buy-from business partner, and ship-from business partner.
   c. By warehouse.
2. Determines whether the purchase schedule is receipt based or shipment based. If a purchase schedule already exists for a combination of item, buy-from business partner, ship-from business partner, purchase office and ship-to address, LN checks whether the schedule is shipment based or receipt based from the **Shipment/Receipt Based** field in the Purchase Schedules (tdpur3110m000) session. If a purchase schedule does not exist, a new schedule is generated. In this case, the receipt based or shipment based information is retrieved from the Purchase Contract Line Logistic Data (tdpur3102m000) session or the Items - Purchase Business Partner (tdipu0110m000) session.
3. If the schedule turns out to be shipment based, Enterprise Planning reads the planned delivery moments for a combination of warehouse, ship-from business partner and delivery pattern from the Planned Delivery Moments (Shipment Based) (tdipu0125m000) session. If the schedule turns out to be receipt based, Enterprise Planning reads the planned delivery moments for a combination of warehouse and delivery pattern from the Planned Delivery Moments (Receipt Based) (tdipu0126m000) session.

Using segment sets

Segments have a specific segment length, are expressed in the segment time unit (weeks, months, four weeks, and so on), and are linked to requirement types. A segment set consists of a number of segments.

To set up a segment set, refer to *Overview of purchase schedule handling (p. 7)*.

Note

- Each segment in the segment set has a unique number. The schedule horizon is built according to the sequence number that is assigned by LN in the **Sequence Number** field of the Segment Set - Segments (tdipu0114m000) session.
- In the Schedule Segments (tdipu0115m000) session, you cannot define a segment time unit and a segment length for a segment with the **Immediate** requirement type, because this requirement type involves undelivered requirements from the past that must be shipped as soon as possible.

Segment sets and purchase schedules

If you use push schedules or pull forecast schedules, the segment set from the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session is used to:

- Regenerate schedule lines in the Regenerate Schedules (tdpur3211m000) session.
- Cluster schedule lines to generate release line details with the status **Created**, which you can perform in the Generate Release Lines (tdpur3222m000) session.

For pull call-off schedules, no segment sets are used because these schedules lines are not regenerated, or clustered and are immediately converted to a release line detail with the status **Scheduled**. As a result, the requirement type is always **Firm**.

Note

If you link segments to the segment set in the Segment Set - Segments (tdipu0114m000) session, you must make sure that you use the correct segment time units. Make sure that:

- You correctly define the first segment time unit of the first segment in a segment set. For example, if you set the first segment time unit to Week or Four Weeks, and if the calculated schedule issue date does not fall on a Monday, some days can be excluded from the clustering or regeneration process. Note that these segment time units always have Monday as a starting point for their activities. As a result, for a segment time unit defined as Week or Four Weeks, LN only starts clustering or regenerating schedule lines from a Monday on and therefore starts to cluster or regenerate schedule lines from the first Monday that follows the previously calculated schedule issue date. For a segment time unit defined as Month, LN does not start to cluster or regenerate schedule lines on the first available Monday, but on the first available Monday of the following month.
- The various segments connect. For example, if you combine the weekly time unit, which runs from Monday through Sunday, with the monthly time unit, which runs from the first Monday of the month through the day before the first Monday of the following month, when you regenerate or cluster schedule lines, a period of time can be undefined.

Example

Next schedule issue date: 19/07/99

Segments in the segment set:

Segment Code	Requirement Type	Time Unit	Segment Length
1	Firm	Weeks	1
2	Planned	Months	1
3	Planned	Months	1

Segment time calculation, based on schedule issue date:

Segment Code	Start Date	End Date	Requirement Type
1	19/07/99	25/07/99	Firm
2	02/08/99	05/09/99	Planned
3	06/09/99	03/10/99	Planned

In this example, a time gap of one week exists between 26 July 1999 and 2 August 1999. Although LN automatically fills this time gap, to avoid time gaps in a segment set, use the four weeks time unit in combination with the weekly time unit.

Note

- When LN regenerates schedule lines, if a period is undefined between two segments, the schedule lines that fall in this time gap automatically receive the requirement type of the segment with the highest sequence number. For example, if a time gap exists between a segment that calculates the **Firm** requirement type and a segment that calculates the **Planned** requirement type, the schedule lines that fall in this time gap automatically receive the **Firm** requirement type. As a result, the time gap from the previous example that runs from 26 July 1999 through 2 August 1999, automatically receives the **Firm** requirement type.
- When LN clusters schedule lines, if a period is undefined between two segments, LN automatically adds another segment that fills this time gap so that the schedule lines that fall in this time gap are also included in the clustering process. All the schedule lines that fall within the time period of that newly generated segment, are clustered into one release line detail.
- All schedule lines in a purchase release that fall after the period calculated by the last segment in a segment set, automatically receive the **Planned** requirement type.

Purchase schedule procedure

Push schedules

A push schedule is a nonreferenced schedule that can either be generated by a planning system, or created manually. In both cases, the same procedure is followed.

For push schedules, the following steps must be completed:

Step 1: Generating a schedule header and lines

Create/generate a schedule header in the Purchase Schedules (tdpur3110m000) session, and schedule lines in the Purchase Schedule Lines (tdpur3111m000) session.

LN generates a new schedule only if Enterprise Planning does not find an existing push schedule for a combination of item, warehouse, buy-from business partner, ship-from business partner, and purchase office.

Before a pull forecast schedule can be automatically generated by Enterprise Planning, the following information is exchanged between Enterprise Planning and Purchase Control:

- **Determination of supplier**
  To determine a supplier:
  a. Enterprise Planning sends the required item (group) and warehouse to Purchase Control.
  b. Purchase Control searches for approved suppliers based on the priority levels defined on the **Buy-from BP Search Schedules** tab of the Purchase Contract Parameters (tdpur0100m300) session.
  c. Purchase Control sends all valid business partners to Enterprise Planning, after which Enterprise Planning selects a supplier.

  When searching for a contract line in the supplier selection process, the warehouse for the plan item in the Items - Planning (cprpd1100m000) session is used. When searching for a purchase contract line detail, this warehouse must be part of the same cluster as the purchase contract line detail's warehouse in the Purchase Contract Line Details (tdpur3101m100) session. For more information, refer to Purchase contracts and Corporate purchase contracts.
- **Determination of requirement dates**
  To determine the requirement dates, Enterprise Planning carries out lead time offsetting. To carry out lead time offsetting, you must generate planned delivery moments far enough in the future in the Generate Planned Delivery Moments (tdipu0225m000) session. The generated planned delivery moments are stored in the Planned Delivery Moments (Shipment Based) (tdipu0125m000) session or the Planned Delivery Moments (Receipt Based) (tdipu0126m000) session, from which they can be called on by Enterprise Planning. For more information, refer to *Using planned delivery moments (p. 10)*.
- **Determination of supply**
  When determining the supply, a number of constraints can prevent Enterprise Planning to generate or update nonreferenced purchase schedule lines.

For more information, refer to:

- *Constraints for generating nonreferenced purchase schedule lines (p. 17)*
- Purchase schedules and Enterprise Planning

When generating a push schedule in the Purchase Schedules (tdpur3110m000) session, a blanket warehousing order is created immediately. You can view blanket warehousing orders in the Warehousing Orders (whinh2100m000) session.

Step 2: Regenerating schedule lines

Regenerate schedule lines in the Regenerate Schedules (tdpur3211m000) session.

For push schedules, schedule line regeneration serves the following purposes:

- To determine the applicable segment set and pattern code as retrieved from the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session, and to update the buyer.
- To calculate the schedule line's new requirement type based on the applicable segment set and issue pattern. As a result, the schedule line is moved in time.

For more information on using segment sets when regenerating purchase schedule lines, refer to *Using segment sets (p. 10)*.

Step 3: Generating a purchase release (line)

Use the Generate Release Lines (tdpur3222m000) session to perform the following actions for **Material Release** and/or **Shipping Schedule**:

- Generate purchase release lines, which are displayed in the Purchase Release (tdpur3121m000) session. For more information, refer to *Purchase releases (p. 36)*.
- Cluster schedule lines, which are displayed in the Purchase Release Line - Details (tdpur3522m000) session. For more information, refer to *Clustering purchase schedule lines (p. 39)*.

Step 4: Approving the purchase release line

Approve the purchase release line in the Approve Release Lines (tdpur3222m100) session.

Step 5: Printing the purchase release

Print the purchase release in the Print Purchase Releases (tdpur3422m000) session.

If the **Communication Channel** field is **EDI** in the Purchase Contract Line Logistic Data (tdpur3102m000) and Items - Purchase Business Partner (tdipu0110m000) sessions and the **Release EDI Message Directly** check box is also selected in these sessions, you need not print the purchase release in the Print Purchase Releases (tdpur3422m000) session. LN automatically prints the purchase release.

Step 6: Inserting authorizations

Authorizations are inserted in the FAB/RAW Authorizations (tdpur3534m000) session.

For more information, refer to *Purchase schedule authorizations (p. 49)*.

Step 7: Inserting receipt details

Receipt details are inserted in the Purchase Schedule - Receipts (tdpur3115m200) session.

For more information on receiving and inspecting scheduled items, refer to:

- *Receipts on push schedule lines (p. 43)*
- *Inspecting scheduled items (p. 47)*

Step 8: Inserting cumulatives

Cumulatives (CUMS) are inserted in the following sessions:

- Shipped Cumulatives (tdpur3131m000)
- Received Cumulatives (tdpur3132m000)
- Required Cumulatives (tdpur3130m000)
- Invoiced Cumulatives (tdpur3133m000)

For more information, refer to *Purchase schedule cumulatives (p. 52)*.

Step 9: Resetting the cumulatives and authorizations

Reset the cumulatives and authorizations in the Reset Cumulatives (tdpur3230m000) or Reset Cumulatives by Contract Total Line (tdpur3230m100) sessions.

For more information, refer to *Resetting purchase schedule cumulatives (p. 59)* and *Resetting authorizations (p. 56)*.

Step 10: Updating history and turnover data

Update purchase schedule history and turnover data in the Process Delivered Purchase Schedules (tdpur3223m000) session. As a result, the status of the schedule lines is changed to **Processed**.

In the Delete Purchase Schedules (tdpur3224m000) session, you can delete the processed purchase schedule lines.

Pull forecast schedules

A pull schedule of the type forecast is a nonreferenced schedule that can be generated only by Enterprise Planning and that cannot be manually created.

Based on the parameters and triggers, the following steps are completed:

Step 1: Generating a schedule header and lines

LN generates a schedule header and schedule lines in the Purchase Schedule (tdpur3610m000) session.

Before a pull forecast schedule can be automatically generated by Enterprise Planning, the following information is exchanged between Enterprise Planning and Purchase Control:

- **Determination of supplier**
  To determine a supplier, the following steps are completed:
  a. Enterprise Planning sends the required item (group) and warehouse to Purchase Control.
  b. Purchase Control searches for approved suppliers based on the priority levels defined on the **Buy-from BP Search Schedules** tab of the Purchase Contract Parameters (tdpur0100m300) session.
  c. Purchase Control sends all valid business partners to Enterprise Planning, after which Enterprise Planning selects a supplier.
- **Determination of requirement dates**
  To determine requirement dates, Enterprise Planning carries out lead time offsetting. To carry out lead time offsetting, you must generate planned delivery moments far enough in the future in the Generate Planned Delivery Moments (tdipu0225m000) session. The generated planned delivery moments are stored in the Planned Delivery Moments (Shipment Based) (tdipu0125m000) session or the Planned Delivery Moments (Receipt Based) (tdipu0126m000) session, from which they can be called on by Enterprise Planning. For more information, refer to *Using planned delivery moments (p. 10)*.
- **Determination of supply**
  Depending on a number of constraints, schedule lines can be generated.
  For more information, refer to:
  - *Constraints for generating nonreferenced purchase schedule lines (p. 17)*
  - Purchase schedules and Enterprise Planning

LN only generates a new schedule if Enterprise Planning does not find an existing pull schedule for a combination of item, buy-from business partner, ship-from business partner, and purchase office. Schedule lines are regarded the same if the **Planned Receipt Date** and **Option List ID** fields are equal.

Although you cannot manually create pull forecast schedules, if no schedule lines exist yet, you can update an active pull forecast schedule in the Purchase Schedules (tdpur3110m000) session.

Step 2: Regenerating schedule lines

Schedule lines must be regenerated in the Regenerate Schedules (tdpur3211m000) session.

For pull-forecast schedules, regeneration is performed only to retrieve the correct segment set, pattern code, and buyer for the purchase schedule.

For more information on using segment sets when regenerating purchase schedule lines, refer to *Using segment sets (p. 10)*.

Step 3: Generating a purchase release

The Generate Release Lines (tdpur3222m000) session is used to perform these actions:

- Generate purchase release lines, which are displayed in the Purchase Release (tdpur3121m000) session. For more information, refer to *Purchase releases (p. 36)*.
- Cluster schedule lines, which are displayed in the Purchase Release Line - Details (tdpur3522m000) session. For more information, refer to *Clustering purchase schedule lines (p. 39)*.

Step 4: Approving the purchase release

The purchase release must be approved in the Approve Release Lines (tdpur3222m100) session.

Step 5: Printing the purchase release

The purchase release must be printed in the Print Purchase Releases (tdpur3422m000) session.

If the **Communication Channel** field is **EDI** in the Purchase Contract Line Logistic Data (tdpur3102m000) and Items - Purchase Business Partner (tdipu0110m000) sessions and the **Release EDI Message Directly** check box is also selected in these sessions, you need not print the purchase release in the Print Purchase Releases (tdpur3422m000) session. LN automatically prints the purchase release.

Step 6: Inserting authorizations

Authorizations are inserted in the FAB/RAW Authorizations (tdpur3534m000) session.

Pull forecast schedules use the required cumulatives from the pull call-off schedule to calculate fab authorizations and raw authorizations.

For more information, refer to *Purchase schedule authorizations (p. 49)*.

Step 7: Generating a pull call-off schedule

A pull call-off schedule must be generated.

For more information, refer to *Pull call-off schedules (p. 20)*.

Constraints for generating nonreferenced purchase schedule lines

The following constraints can prevent Enterprise Planning to generate or update nonreferenced purchase schedule lines:

- Frozen zone settings
- Generation horizon of the patterns
- Expiry date of the contract
- **Firm Planned** status of the schedule line

Frozen zone settings

Frozen periods, which you can specify in the Items - Purchase Business Partner (tdipu0110m000), Purchase Contract Line Logistic Data (tdpur3102m000), and Purchase Contract Line Logistic Detail Line (tdpur3102m100) sessions, can prevent schedule lines to be generated or updated.

The following frozen time zones are available:

- **Frozen period**
  During the frozen period, Enterprise Planning cannot generate/update schedule lines.
- **Upper bound**
  During the period of upper bound, the schedule line quantities can decrease, but not increase. As a result, Enterprise Planning cannot generate new schedule lines in this period.
- **Lower bound**
  During the period of lower bound, the schedule line quantities are allowed to increase, but not to decrease. As a result, Enterprise Planning can generate new schedule lines in this period, but existing schedule lines cannot be deleted.

Note

- If the purchase schedule is **Shipment Based**, frozen time limits are based on planned shipment dates. If the schedule is **Receipt Based**, frozen time limits are based on planned receipt dates.
- If Enterprise Planning cannot increase the schedule line quantity in the frozen period or during the period of upper bound, LN automatically stores the demand at the first available delivery moment that falls outside these periods.
- If schedule lines are already generated for a specific item, depending on the schedule line's freezing status, which you can view in the **Frozen** field of the Purchase Schedule Lines (tdpur3111m000) session, during order simulation, Enterprise Planning first removes all schedule lines with a freezing status of **Free** and the **Firm Planned** check box cleared in the Purchase Schedule Lines (tdpur3111m000) session. Enterprise Planning then recalculates the requirements and inserts new schedule lines.
- Do not specify a period of lower bound if you want Enterprise Planning to automatically delete undelivered and redundant schedule lines with a date in the past. Therefore, you can select the **Delete Past Schedule Lines** check box only if the **Frozen Period for Decreasing Qty** field is zero.

Generation horizon of the patterns

In Enterprise Planning, requirements are grouped based on the delivery moments generated in the Generate Planned Delivery Moments (tdipu0225m000) session. In the Generate Planned Delivery Moments (tdipu0225m000) session, you must define a horizon end date. The horizon end date is the date until which the delivery moments are stored in the Planned Delivery Moments (Receipt Based) (tdipu0126m000) session and the Planned Delivery Moments (Shipment Based) (tdipu0125m000) session, from which they can be called on by Enterprise Planning for lead time offsetting. Because delivery moments are not calculated for the period after the horizon end date, Enterprise Planning cannot find valid delivery moment for this period. As a result, for the period after the horizon end date, Enterprise Planning is free to plan its own delivery moments.

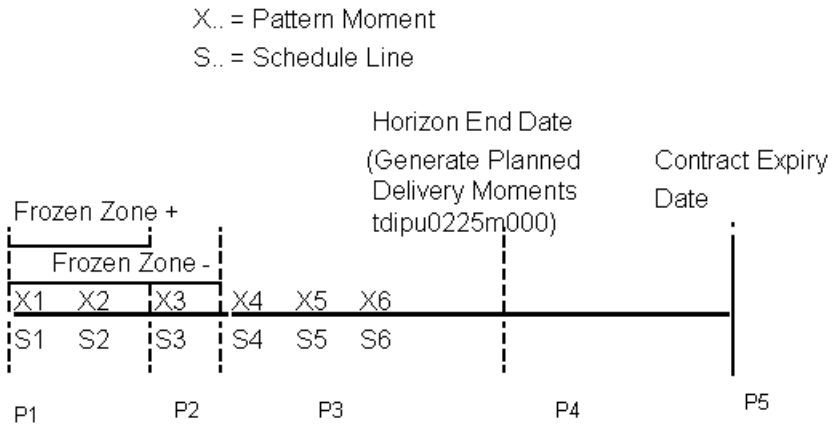
Expiry date of the contract

If requirements fall after the contract's expiry date, valid business partners can no longer be found. As a result, Enterprise Planning generates planned purchase orders without a supplier. In this case, LN sends a signal to Enterprise Planning that a planned purchase order is generated instead of a schedule line.

Firm Planned status of the schedule line

If you click **Firm Planned** in the Purchase Schedule Lines (tdpur3111m000) session, a schedule line is made **Firm Planned**. As a result, the schedule line cannot be changed during the next run of Enterprise Planning.

Example



Legend

P1 The frozen period.

P2 The period of lower bound. If the frozen zone- ended before the frozen zone+, an upper bound would be applicable.

P3 For this period, the delivery moments generated in the Generate Planned Delivery Moments (tdipu0225m000) session, which are displayed in the Planned Delivery Moments (Shipment Based) (tdipu0125m000) or the Planned Delivery Moments (Receipt Based) (tdipu0126m000) sessions, can be used by Enterprise Planning for lead time offsetting, and schedule lines can be generated.

P4 The period for which no valid delivery moments are available in the Planned Delivery Moments (Shipment Based) (tdipu0125m000) or the Planned Delivery Moments (Receipt Based) (tdipu0126m000) sessions. In this period, Enterprise Planning is free to plan its own delivery moments when generating schedule lines.

P5 The contract has expired. A planned purchase order is generated instead of a purchase schedule line.

Pull call-off schedules

A pull schedule of the type call-off is a referenced schedule that is generated from Assembly Control or from Warehousing (Kanban, time-phased order point).

The following steps are automatically performed based on the parameters and triggers:

Step 1: Generating a schedule header

A purchase schedule (header) is generated in the Purchase Schedules (tdpur3110m000) session. If the pull call-off schedule is preceded by a pull forecast schedule, LN searches for the corresponding pull forecast schedule in the Purchase Schedules (tdpur3110m000) session. Once found, LN creates a pull call-off schedule with the same schedule number as the pull forecast schedule. In this way, forecasting data and ordering data are separated. However, if in the Purchase Contract Line Logistic Data (tdpur3102m000) session the **Use Shipping Schedule** or **Use Sequence Shipping Schedule** check boxes are selected, no forecasting data is generated. In this case, the generated pull call-off schedule has no corresponding pull forecast schedule.

You cannot manually update pull call-off schedules. You can update these schedules only from the origin that generated the pull call-off schedule.

Step 2: Generating schedule lines

Schedule lines are generated in the Purchase Schedule Lines (tdpur3111m000) session.

If the pull call-off schedule is triggered from Warehousing, the schedule lines in the Purchase Schedule Lines (tdpur3111m000) session are generated from the Generate Orders (KANBAN) (whinh2200m000), or Generate Orders (TPOP) (whinh2201m000) sessions.

If the pull call-off schedule is triggered from Assembly Control and the schedule release type is **Sequence Shipping Schedule**, the number of lines for each schedule can be enormous. Therefore, for each item, a schedule line per call-off is generated in the Purchase Schedule Lines (tdpur3111m000) session, but sequence details, such as VIN number and line station, are stored in the Sequence Shipping data (tdpur3517m000) session. To start this session, click **Sequence Shipping data** on the appropriate menu of the Purchase Schedule Lines (tdpur3111m000) session.

For more information, refer to *Sequence shipping schedules (p. 22)*.

Step 3: Generating a purchase release

A purchase release is generated with the **Scheduled** status in the Purchase Releases (tdpur3120m000) session. With each generation of a schedule line, LN generates a release line detail record in the Purchase Release Line - Details (tdpur3522m000) session. This record has a one-to-one relationship with the schedule line and has the **Scheduled** status.

If the schedule is a sequence shipping schedule, however, the following applies:

- Only a purchase release header is created. No purchase release lines and purchase release line detail records are created. Items in a sequence shipping schedule are required for a combination of vehicle number (VIN), line station, and assembly kit. Therefore, a link exists

between the release header in the Purchase Releases (tdpur3120m000) session and the release lines in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session.

- The **Generate Release per Vehicle** or **Generate Release per Item** check boxes in the Purchase Releases (tdpur3120m000) session determine how the release is created: per vehicle, per item, or per business partner.

For more information, refer to *Purchase releases (p. 36)*.

Step 4: Printing the purchase release

The purchase release is printed in the Print Purchase Releases (tdpur3422m000) session.

If the **Communication Channel** field is **EDI** in the Purchase Contract Line Logistic Data (tdpur3102m000) and Items - Purchase Business Partner (tdipu0110m000) sessions and the **Release EDI Message Directly** check box is also selected in these sessions, you need not print the purchase release in the Print Purchase Releases (tdpur3422m000) session. LN automatically prints the purchase release.

Step 5: Inserting receipt details

Receipt details are inserted in the Purchase Schedule - Receipts (tdpur3115m200) session.

After receipts are confirmed in Warehousing, scheduled items can also be inspected. For more information, refer to *Inspecting scheduled items (p. 47)*.

Step 6: Inserting cumulatives

Cumulatives (CUMS) are inserted in these sessions:

- Shipped Cumulatives (tdpur3131m000)
- Received Cumulatives (tdpur3132m000)
- Required Cumulatives (tdpur3130m000)
- Invoiced Cumulatives (tdpur3133m000)

For pull call-off schedules, cumulatives are filled for information purposes only. Pull call-off schedules do not use cumulatives. Pull forecast schedules, however, which usually have the same schedule number as a particular pull call-off schedule, use the required cumulatives from the pull call-off schedule to calculate fab authorizations and raw authorizations.

For more information, refer to:

- *Purchase schedule cumulatives (p. 52)*
- *Purchase schedule authorizations (p. 49)*

Step 7: Resetting the cumulatives and authorizations

The cumulatives and authorizations are reset in the Reset Cumulatives (tdpur3230m000) session.

For more information, refer to *Resetting purchase schedule cumulatives (p. 59)* and *Resetting authorizations (p. 56)*.

Step 8: Updating history and turnover data

Purchase schedule history and turnover data is updated in the Process Delivered Purchase Schedules (tdpur3223m000) session. As a result, the status of the schedule lines is changed to **Processed**.

In the Delete Purchase Schedules (tdpur3224m000) session, you can delete the processed purchase schedule lines.

Sequence shipping schedules

Sequence shipping schedules are pull call-off schedules that are generated from Assembly Control through the order-controlled/SILS supply system.

To update a sequence shipping schedule line, the assembly order that generated the sequence shipping schedule line must be changed.

To create sequence shipping schedule lines

If Assembly Control calls off goods via the SILS supply system, LN performs the following steps:

1. In Assembly Control, a reference number/ID is generated, which represents a combination of **VIN**, **Line Station**, and **Assembly Kit**.
2. If a call-off is made, a schedule line for every item is generated in the Purchase Schedule Lines (tdpur3111m000) session and the generated reference ID is inserted in the **Reference ID** field.
3. For every schedule line, sequence shipping data is inserted in the Sequence Shipping data (tdpur3517m000) session.
4. For every sequence shipping schedule line, a record is inserted in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session.

Note

Sequence shipping schedules can contain configured items. For more information, refer to *Configured items on purchase schedules (p. 30)*.

To update sequence shipping schedule lines

To update a sequence shipping schedule line, the assembly order that generated the sequence shipping schedule line must be changed.

Updates are of two types:

- **Non-unique fields**
  Updates are made to fields that are not unique.
  In the Sequence Shipping data (tdpur3517m000) session, these are updates to the fields, such as:
  - **Job Sequence**
  - **Quantity**

    - **Requirement Date**
    - **Option List ID**
- **Unique fields**
  Updates are made to unique fields. These are updates to other fields in the Sequence Shipping data (tdpur3517m000) session, such as **Assembly Kit**, **VIN**, **Line Station**, and so on.

The action LN takes does not only depend on the kind of field that must be updated, but also on whether or not the sequence shipping schedule line is already sent in a purchase release.

Note

In the **Sent** field of the Sequence Shipping data (tdpur3517m000) session, you can view if the sequence shipping schedule line was already sent in a purchase release.

To update not yet sent sequence shipping lines

- If Assembly Control changes any field on a sequence shipping line, the applicable field is simply updated in the Purchase Schedule Lines (tdpur3111m000) session, the Sequence Shipping data (tdpur3517m000) session, and the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session. The status of the schedule line remains **Order Generated** in the Purchase Schedule Lines (tdpur3111m000) session and **Created** in the Sequence Shipping data (tdpur3517m000) session/ Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session.
- If Assembly Control wants to delete a requirement, the applicable sequence shipping schedule line in the Purchase Schedule Lines (tdpur3111m000) session and the Sequence Shipping data (tdpur3517m000) session receive the status **Canceled**. The line is simply removed from the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session.

To update a unique field on a sequence shipping line that is already sent in a purchase release

If an update is made to a unique field, LN performs the following steps:

1. The old sequence shipping schedule line in the Purchase Schedule Lines (tdpur3111m000) session receives the status **Canceled**.
2. The corresponding record in the Sequence Shipping data (tdpur3517m000) session keeps the status **Created**, but another record is inserted with the status **Canceled**. The value of the canceled sequence shipping schedule line's **Revision** field is incremented, because the line status changes from **Created** to **Canceled**.
3. The canceled sequence shipping line from the Sequence Shipping data (tdpur3517m000) session is inserted in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session under a new **Release Revision**. The reason for this is that the cancellation must also be communicated to the supplier by means of a (new) purchase release.
4. A new sequence shipping schedule line is created with the status **Order Generated** in the Purchase Schedule Lines (tdpur3111m000) session and the status **Created** in the Sequence Shipping data (tdpur3517m000) session/ Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session.

To update a non-unique field on a sequence shipping line that is already sent in a purchase release

If an update is made to a field which is not unique, LN takes the following steps:

1. The old sequence shipping schedule line in the Purchase Schedule Lines (tdpur3111m000) session is simply updated and keeps the **Order Generated** status.
2. The applicable sequence shipping schedule line in the Sequence Shipping data (tdpur3517m000) session keeps the **Created** status, but another record is inserted with the **Modified** status. The value of the modified sequence shipping schedule line's **Revision** field is incremented, because the line status changes from **Created** to **Modified**.
3. The modified sequence shipping line from the Sequence Shipping data (tdpur3517m000) session is inserted in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session under a new **Release Revision**. The reason for this is that the modification must also be communicated to the supplier by means of a (new) purchase release.

Example 1 - To create sequence shipping schedule lines

Requirements from Assembly Control:

VIN number	Job seq.	Assembly kit	Line station	Item	Date	Qty
VIN001	JS001	K01	LS01	ITEM1	10/1/99 8:00	2
VIN001	JS001	K01	LS01	ITEM2	10/1/99 8:00	4
VIN001	JS001	K01	LS01	ITEM3	10/1/99 8:00	4
VIN002	JS002	K02	LS01	ITEM1	10/1/99 12:00	2
VIN002	JS002	K02	LS01	ITEM2	10/1/99 12:00	5
VIN002	JS002	K02	LS01	ITEM4	10/1/99 12:00	4
VIN003	JS003	K03	LS01	ITEM1	10/1/99 16:00	2
VIN003	JS003	K03	LS01	ITEM2	10/1/99 16:00	4
VIN003	JS003	K03	LS01	ITEM5	10/1/99 16:00	8

Results in the Purchase Schedule Lines (tdpur3111m000) session:

Schedule number	Pos.	Item	Requirement date	Qty
SCH0001	10	ITEM1	10/1/99 8:00	2
SCH0002	10	ITEM2	10/1/99 8:00	4
SCH0003	10	ITEM3	10/1/99 8:00	4
SCH0001	20	ITEM1	10/1/99 12:00	2
SCH0002	20	ITEM2	10/1/99 12:00	5
SCH0004	10	ITEM4	10/1/99 12:00	4
SCH0001	30	ITEM1	10/1/99 16:00	2
SCH0002	30	ITEM2	10/1/99 16:00	4
SCH0005	10	ITEM5	10/1/99 16:00	8

Results in the Sequence Shipping data (tdpur3517m000) session:

Schedule	Pos.	Seq. revision	VIN	Job seq.	Kit	Line station	Item	Date	Qty	Status
SCH0001	10	1	VIN001	JS001	K01	LS01	ITEM1	10/1/99 8:00	2	Created
SCH0002	10	1	VIN001	JS001	K01	LS01	ITEM2	10/1/99 8:00	4	Created
SCH0003	10	1	VIN001	JS001	K01	LS01	ITEM3	10/1/99 8:00	4	Created
SCH0001	20	1	VIN002	JS002	K02	LS01	ITEM1	10/1/99 12:00	2	Created
SCH0002	20	1	VIN002	JS002	K02	LS01	ITEM2	10/1/99 12:00	5	Created

SCH0004	10	1	VIN002	JS002	K02	LS01	ITEM4	10/1/99	12:00	4	Created
SCH0001	30	1	VIN003	JS003	K03	LS01	ITEM1	10/1/99	16:00	2	Created
SCH0002	30	1	VIN003	JS003	K03	LS01	ITEM2	10/1/99	16:00	4	Created
SCH0005	10	1	VIN003	JS003	K03	LS01	ITEM5	10/1/99	16:00	8	Created

Results in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session:

Release number	Release revision	Release pos.	Schedule	Schedule pos.	Seq. revision	Item	Qty	Status
REL001	0	10	SCH0001	10	1	ITEM1	2	Created
REL001	0	20	SCH0002	10	1	ITEM2	4	Created
REL001	0	30	SCH0003	10	1	ITEM3	4	Created
REL001	0	40	SCH0001	20	1	ITEM1	2	Created
REL001	0	50	SCH0002	20	1	ITEM2	5	Created
REL001	0	60	SCH0004	10	1	ITEM4	4	Created
REL001	0	70	SCH0001	30	1	ITEM1	2	Created
REL001	0	80	SCH0002	30	1	ITEM2	4	Created
REL001	0	90	SCH0005	10	1	ITEM5	8	Created

Example 2 - To update sequence shipping schedule lines

The Assembly Control module sends the following updates:

- VIN001 on JS001 is replaced by VIN004 on JS001.

- For VIN003, the quantity of ITEM2 is increased from 4 to 6.
- All requirements from Example 1 are already sent in a purchase release.

As a result, the following changes are made in the Purchase Schedule Lines (tdpur3111m000) session:

Canceled

Schedule	Pos.	Item	Requirement date	Qty	Status
SCH0001	10	ITEM1	10/1/99 8:00	2	Canceled
SCH0002	10	ITEM2	10/1/99 8:00	4	Canceled
SCH0003	10	ITEM3	10/1/99 8:00	4	Canceled

Updated

Schedule	Pos.	Item	Requirement date	Qty	Status
SCH0002	30	ITEM2	10/1/99 16:00	6	Order Generated

New

Schedule	Pos.	Item	Requirement date	Qty	Status
SCH001	40	ITEM1	10/1/99 8:00	2	Order Generated
SCH002	40	ITEM2	10/1/99 8:00	4	Order Generated
SCH003	20	ITEM3	10/1/99 8:00	4	Order Generated

As a result, the following changes are made in the Sequence Shipping data (tdpur3517m000) session:

Schedule	Pos.	Seq. revision	VIN	Job seq.	Kit	Item	Date	Qty	Sent	Status

SCH0001	10	1	VIN001	JS001	K01	ITEM1	10/1/99 8:00	2	Yes	Created
SCH0001	10	2	VIN001	JS001	K01	ITEM1	10/1/99 8:00	2	No	Canceled
SCH0001	40	1	VIN004	JS001	K04	ITEM1	10/1/99 8:00	2	No	Created
SCH0002	10	1	VIN001	JS001	K01	ITEM2	10/1/99 8:00	4	Yes	Created
SCH0002	10	2	VIN001	JS001	K01	ITEM2	10/1/99 8:00	4	No	Canceled
SCH0002	40	1	VIN004	JS001	K04	ITEM2	10/1/99 8:00	4	No	Created
SCH0003	10	1	VIN001	JS001	K01	ITEM3	10/1/99 8:00	4	Yes	Created
SCH0003	10	2	VIN001	JS001	K01	ITEM3	10/1/99 8:00	4	No	Canceled
SCH0003	20	1	VIN004	JS001	K04	ITEM3	10/1/99 8:00	4	No	Created
SCH0002	30	1	VIN003	JS003	K03	ITEM2	10/1/99 16:00	4	Yes	Created
SCH0002	30	2	VIN003	JS003	K03	ITEM2	10/1/99 16:00	6	No	Modified

As a result, the following changes are made in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session:

Release number	Release revision	Release pos.	Schedule	Schedule pos.	Seq. revision	Item	Qty	Status
REL001	1	10	SCH0001	10	2	ITEM1	2	Canceled
REL001	1	20	SCH0002	10	2	ITEM2	4	Canceled
REL001	1	30	SCH0003	10	2	ITEM3	4	Canceled
REL001	1	80	SCH0002	30	2	ITEM2	6	Modified
REL001	1	100	SCH0001	40	1	ITEM1	2	Created

REL001	1	110	SCH0002	40	1	ITEM2	4	Created
REL001	1	120	SCH0003	20	1	ITEM3	4	Created

Configured items on purchase schedules

In an assembly environment, for example a car or truck manufacturer, end products are produced on an assembly line in a variety of configurations. During the sales process, the options are specified, such as horse power, color, and size of the required end product. This results in a specific configuration of the product that will be sold to the customer. Based on the demand, which is triggered by assembly planning, assembly parts in different configurations must be purchased.

These configured items can be purchased via purchase schedules, which contain the configuration information (options and features) needed for the supplier to produce the product. Planned requirements are sent to the supplier in a material release, which is generated by the order plan. Actual requirements are called-off by means of a sequence shipping schedule, which is triggered by the call-off on the assembly line. Based on the sequence shipping schedule, the configured item is received in the correct sequence and stored with the configuration information.

Note

Configurable purchased items can only be sold as a part in a configured end item.

Master data

If you want to use configured items in the purchase schedule procedure, define the following master data:

- **Item Base Data Parameters (tcibd9199m000)**
  Specify the **Option List Company**, **Option List Number Group**, and **Option List Series** parameters.
- **Items - General (tcibd0501m000)**
  Set the **Default Supply Source** to **Purchase**.
- Select the **Configurable** check box for the item. As a result, the **Purchase Schedule in Use** check box is automatically selected and the **Schedule Type** field is set to **Pull Schedule**.
- **Purchase Contract Lines (tdpur3101m000)**
  Enter the configurable item in the **Item** field. As a result, the **Option Based Pricing** check box is automatically selected, which indicates that item prices are retrieved from the generic price list in Manufacturing and not from the Purchase Contract Prices (tdpur3103m000) session.
- **Purchase Contract Line Logistic Data (tdpur3102m000)**
  Select the **Use Sequence Shipping Schedule** check box and (optionally) the **Use Material Release** check box.

For information on general purchase schedule master data, refer to *Overview of purchase schedule handling (p. 7)*.

Pull forecast schedules

If the **Use Material Release** check box is selected for the configurable item in the Purchase Contract Line Logistic Data (tdpur3102m000) session, first *planned* schedule requirements must be communicated. Therefore, always a pull forecast schedule is generated that precedes the pull call-off sequence shipping schedule.

The pull forecast schedule, which is generated in the Purchase Schedule (tdpur3610m000) session, is based on an actual demand order in Enterprise Planning. A normal contract is automatically linked to the purchase schedule. However, instead, you can link a special contract to the schedule. When LN links a contract to the purchase schedule, the schedule header is loaded with the configurable item and the default values of the linked contract. If the **Option List ID** is filled on the schedule line, the schedule line contains the configured item.

For more information on the steps that are carried out in the pull forecast schedule procedure, refer to *Pull forecast schedules (p. 15)*.

Sequence shipping schedules

To order the configured items, in the Purchase Schedule (tdpur3610m000) session, a pull call-off schedule of the sequence shipping schedule type is generated by Assembly Control. The item's options and features are stored in the Purchase Schedule Lines (tdpur3111m000) and Sequence Shipping data (tdpur3517m000) sessions.

Based on the sequence shipping schedule, the configured item is received in the correct sequence and stored with the configuration information.

For more information on:

- The steps that are carried out in the pull call-off schedule procedure, refer to *Pull call-off schedules (p. 20)*.
- The creation and update of sequence shipping schedules, refer to *Sequence shipping schedules (p. 22)*.

Configured item prices

If a configurable item is specified in the Purchase Contract Lines (tdpur3101m000) session, the **Option Based Pricing** check box is automatically selected and unavailable. If this check box is selected, item prices are retrieved from the generic price list in the Generic Price Lists (tipcf4101m000) session and not from the Purchase Contract Prices (tdpur3103m000) session. The generic price list contains the date effective prices for a configured item.

Discounts are always retrieved from the linked purchase contract price revision and must still be recorded in the Purchase Contract Prices (tdpur3103m000) session. But because discounts are optional, contract lines that use option based pricing need not have a linked purchase contract price revision.

Note

The schedule line date, which is determined by the **Purchase Price Date Type** field in the Pricing Parameters (tdpcg0100m000) session, is used to search for the current price on the generic price list or the purchase contract price revision.

Configuration changes

To support configuration changes on assembly orders, in Procurement:

- Configuration changes are communicated to the sequence shipping schedule lines. How a configuration change is handled, depends on whether or not the sequence shipping schedule line is already sent in a purchase release. For more information, refer to *Sequence shipping schedules (p. 22)*.
- Configured items can be received that deviate from the ordered configured items.

Receipts of deviating configured items

If a configured item is received that deviates from the ordered configured item, different scenarios can be distinguished to handle the wrong item at the moment of receipt:

- **Return item immediately**
  During (physical) goods receipt, the deviating configured item is not registered in LN, but immediately returned by the carrier.
- **Store item, but request a correct item for the schedule line**
  The deviating configured item is received as an unexpected warehouse receipt and registered in the Purchase Orders (tdpur4100m000) session as a purchase order with the **Warehousing Receipt** origin. Therefore, the deviating item is not received against the schedule line, which remains open for receiving the correct configured item. To make use of this scenario, you must select the **Generate Order for Unexpected Warehouse Receipt** check box in the Items - Purchase Business Partner (tdipu0110m000) session.
- **Receive item against schedule line, but return item later**
  The deviating configured item is first received against the schedule line, but then returned by means of a return order in the Purchase Orders (tdpur4100m000) session. The return order can be linked to the original purchase schedule or purchase schedule receipt. The order lines can also be copied from the purchase schedule history.
- **Receive item against schedule line, but reject item later and require a correct item**
  The deviating configured item is first received against the schedule line, but, after evaluation of the received configuration, it is decided to delete the receipt and not register it against the schedule. The planned receipt remains open. The deviating configured item can be returned by the carrier or received as an unexpected warehouse receipt. This scenario is especially applicable if ASN's are used, which require that receipts are registered against the schedule.
- **Store item and agree with customer to use this item**
  The deviating configured item is received against the schedule line and used as it is received. Therefore, the configuration must be changed on the assembly order.

Note

If, in the Purchase Orders (tdpur4100m000) session, the deviating configured item is registered as an unexpected warehouse receipt, or returned on a return order of the **Return Inventory** type, the **Option List ID** field is also specified in the Purchase Order Lines (tdpur4101m000) session.

Price and discounts of deviating configured items

If a receipt is confirmed of a configured item that deviates from the ordered configured item, the price and discounts of the received configured item can also deviate from the ordered item's price and discounts. To always use the price and discounts of the received configuration, in the Sequence Shipping data (tdpur3517m000) session, LN retrieves the price and discounts from the last **Sent** sequence shipping schedule line revision with a configured item that is equal to the received configured item.

Purchase schedule release types

Purchase schedule release types determine the type of purchase release and the requirement types that can be sent.

Release types

A release can be of the following types:

- **Material Release**
  A material release can contain push schedules or pull-forecast schedules.
- **Shipping Schedule**
  A shipping schedule can contain push schedules or pull call-off schedules.
- **Sequence Shipping Schedule**
  A sequence shipping schedule can only contain pull call-off schedules.

Requirement types

The following requirement types can be communicated:

- **Immediate**
  These schedule requirements have a start date in the past at the time of creation. These requirements must be shipped as soon as possible.
- **Firm**
  These schedule requirements are handled as actual orders that can be shipped.
- **Planned**
  These schedule requirement are sent to you for planning purposes only.

Release types and requirement types

The schedule's business partner determines from which session LN retrieves the logistic data to determine the type of purchase release and the requirements that can be sent.

- **Internal business partner**
  Data is retrieved from the Items - Purchase Business Partner (tdipu0110m000) session.
- **External business partner**
  Data is retrieved from the Purchase Contract Line Logistic Data (tdpur3102m000) session.

Items - Purchase Business Partner (tdipu0110m000)

Based on the **Release Type** in the Items - Purchase Business Partner (tdipu0110m000) session, a purchase release can be of the following **Release Type** and can contain purchase release line details with the following **Requirement Type**:

Release Type in Items - Purchase Business Partner (tdipu0110m000)	**Release Type**	**Requirement Type**	**Linked EDI messages (BEMIS)**
Shipping Schedule Only	**Shipping Schedule**	**Firm** or **Immediate**	BEM SHP001
Sequence Shipping Schedule Only	**Sequence Shipping Schedule**	**Firm** or **Immediate**	BEM SEQ001
Shipping Schedule or **Sequence Shipping Schedule**	**Material Release**	**Planned**	BEM MRL001
Shipping Schedule or **Sequence Shipping Schedule**	**Shipping Schedule** or **Sequence Shipping Schedule**	**Firm** or **Immediate**	BEM SHP001 or BEM SEQ001
Material Release	**Material Release**	**Planned**, **Firm**, or **Immediate**	BEM MRL001

Purchase Contract Line Logistic Data (tdpur3102m000)

Based on the **Schedule Message Types** in the Purchase Contract Line Logistic Data (tdpur3102m000) session, a purchase release can be of the following **Release Type** and can contain purchase release line details with the following **Requirement Type**:

Schedule Message Types				Release Type	Requirement Type	Linked EDI messages (BEMIS)
Use Material Release	Use Material Release for Firm Requirements	Use Shipping Schedule	Use Sequence Shipping Schedule			
yes	no	yes	yes	**Shipping Schedule** or **Sequence Shipping Schedule**	**Firm** or **Immediate**	BEM SHP001 or BEM SEQ001
yes	no	yes	yes	**Material Release**	**Planned**	BEM MRL001
yes	yes	not applicable	not applicable	**Material Release**	**Planned**, **Firm**, or **Immediate**	BEM MRL001
no	no	yes	not applicable	**Shipping Schedule**	**Firm** or **Immediate**	BEM SHP001
no	no	not applicable	yes	**Sequence Shipping Schedule**	**Firm** or **Immediate**	BEM SEQ001

Note

- For push schedules, shipping can be performed based on the EDI message BEM MRL001, but only for those schedule lines whose requirement type is **Firm** or **Immediate**.
- EDI messages are only generated if the value of the **Communication Channel** field in the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session is set to **EDI**.
- Segment set(s), which consist of several segments, are linked to requirement types. Which segment set(s) can be entered in the Items - Purchase Business Partner (tdipu0110m000) or Purchase Contract Line Logistic Data (tdpur3102m000) session, depends on the chosen release/message type(s). Dependent on the release/message type(s) and the applicable requirement type, specific EDI messages can be generated in time when sending the purchase release to the supplier.
- Because pull call-off schedule lines are not clustered and are automatically converted to purchase release line details with the status **Scheduled**, no segment set(s) are used. As a result, the requirement type is always **Firm**.

- For push schedules lines, requirement types in the Purchase Schedule Lines (tdpur3111m000) session are calculated during the regeneration process, which you can perform in the Regenerate Schedules (tdpur3211m000) session. The requirement types in the Purchase Release Line - Details (tdpur3522m000) session are directly calculated from the schedule's applicable segment set and issue pattern. If you do not regenerate the schedule line, the value of the **Requirement Type** field in the Purchase Schedule Lines (tdpur3111m000) session has the same value as the **Requirement Type** field in the Purchase Release Line - Details (tdpur3522m000) session. Which schedule lines are included when you generate release lines in the Generate Release Lines (tdpur3222m000) session, depends on the push schedule's release/message type(s). For example, if the release type is defined as **Shipping Schedule Only**, no material release is created, so the purchase release does not contain **Planned** release lines.

Purchase releases

A purchase release is used to send out, under one release number, several schedules with similar characteristics.

These characteristics must be the same:

- Ship-from business partner
- Ship-to address
- Release type (material release, shipping schedule, or sequence shipping schedule
- Shipment based schedule or receipt based schedule
- Communication method
- Warehouse

Purchase release header statuses

In the Purchase Releases (tdpur3120m000) session, purchase release headers are displayed. Each header contains a release status that indicates which steps in the release procedure have already been carried out and what the next step must be. Naturally, the type of step to be taken also depends on the schedule type (push schedule, pull forecast schedule, or pull call-off schedule).

A purchase release can have the following statuses:

- **Created**
  The purchase release contains lines that all have the release status **Created**, or lines of which some have the status **Created** and some have the status **Scheduled**.
- **Scheduled**
  The purchase release is approved and contains lines that all have the release status **Scheduled**.
- **Sent**
  The purchase release is printed/EDI messages are sent and contains lines that all have the release status **Sent**.

Purchase release line (detail) statuses

In the Purchase Release (tdpur3121m000) session and the Purchase Release Line - Details (tdpur3522m000) session, these statuses represent the following:

- **Created**
  The purchase release line in the Purchase Release (tdpur3121m000) session and the linked release line detail(s) in the Purchase Release Line - Details (tdpur3522m000) session, which can contain clustered schedule lines, are not approved.
- **Scheduled**
  The purchase release line and the linked release line detail(s) are approved.
- **Sent**
  The purchase release line with the status **Scheduled** and the linked release line detail(s), are printed in the Print Purchase Releases (tdpur3422m000) session with the **Final Report** check box selected, or EDI messages are prepared and sent by Electronic Commerce.

Note

- For nonreferenced schedules, you can approve the purchase release line, and consequently the linked release line detail(s), in the Approve Release Lines (tdpur3222m100) session. For referenced schedules, LN automatically converts the schedule lines into a purchase release line and a release line-detail with the status **Scheduled**. The schedule lines are not clustered.
- For nonreferenced schedules, you can cluster schedule lines in the Generate Release Lines (tdpur3222m000) session.
- EDI messages are automatically prepared if a purchase release receives the status **Scheduled** and you have selected the **Release EDI Message Directly** check box in the Purchase Contract Line Logistic Data (tdpur3102m000) session and/ or the Items - Purchase Business Partner (tdipu0110m000) session.

Relation between purchase release header and generating releases

When running the Generate Release Lines (tdpur3222m000) session for nonreferenced schedules, or when generating schedule lines for referenced schedules, LN first checks whether a purchase release exists in the Purchase Releases (tdpur3120m000) session for the combination of buy-from business partner, ship-from business partner, release type, shipment based/ receipt based schedule, and communication method.

Purchase release does not exist

If no purchase release exists, LN takes the following steps:

1. A new purchase release is created in the Purchase Releases (tdpur3120m000) session with a release revision number of zero and a release status of **Created** for nonreferenced schedules, or **Scheduled** for referenced schedules.
2. A purchase release line is created in the Purchase Release (tdpur3121m000) session with the release status **Created** (nonreferenced), or **Scheduled** (referenced).

3. (A) purchase release line detail record(s) is/are inserted in the Purchase Release Line - Details (tdpur3522m000) session with the status **Created** or **Scheduled**. If the schedule is a nonreferenced schedule, the records in the Purchase Release Line - Details (tdpur3522m000) session can be clustered schedule lines.

Note

If the referenced schedule is a sequence shipping schedule, only a purchase release header is created. No purchase release lines and purchase release line detail records are created. The reason for this is that, usually, a release is sent by item. Items in a sequence shipping schedule, however, are required for a combination of vehicle number (VIN), line station, and assembly kit. For this reason, a link exists between the release header in the Purchase Releases (tdpur3120m000) session and the release lines in the Purchase Release Lines - Sequence Shipping Data (tdpur3523m000) session. For details, refer to *Sequence shipping schedules (p. 22)*.

Purchase release does exist

If a purchase release already exists, dependent on the purchase release's status, when running the Generate Release Lines (tdpur3222m000) session for nonreferenced schedules, or when generating schedule lines for referenced schedules, LN takes the following steps:

- If the purchase release's highest revision in the Purchase Releases (tdpur3120m000) session has the status **Created**, the release lines in the Purchase Release (tdpur3121m000) session, which can have the status **Scheduled** and/or **Created**, and the release line details in the Purchase Release Line - Details (tdpur3522m000) session, are simply updated.
- If the purchase release's highest revision has the status **Sent**, a new release revision is created with the status **Created** or **Scheduled**.
- If the purchase release's highest revision has the status **Scheduled**, you must either send the purchase release or run the Approve Release Lines (tdpur3222m100) session with the **Rebuild Release** check box selected. If you choose the last option, the release lines are generated again for the specific purchase release. The purchase release keeps the same release revision number as the previous one and receives the status **Scheduled**.

Note

- Rebuilding the release in the Approve Release Lines (tdpur3222m100) session is only applicable for nonreferenced schedules.
- Even if the status of the purchase release's highest revision is not **Sent**, LN can still generate new revision numbers when generating release lines. This occurs if schedules with various schedule issue dates are stored under one purchase release. Any schedule with a schedule issue date different from the issue date of the last release, receives a new revision number.
- Pull call-off schedules, for which no schedule issue dates are defined, are automatically stored under the last purchase release revision with the status **Scheduled**. Because call-off schedules are not released based on schedule issue date, it is better to select the **Release EDI Message Directly** check box in the Purchase Contract Line Logistic Data (tdpur3102m000) session and/ or the Items - Purchase Business Partner (tdipu0110m000) session. If you select the **Release EDI Message Directly** check box, LN automatically generates EDI messages for **Scheduled** purchase release lines, which Electronic Commerce sends to the supplier.

Purchase releases - additional information

- The way in which LN handles schedule lines in a purchase release also depends on the value of the **Tax on Purchase Release Line level** check box in the Purchase Contract Parameters (tdpur0100m300) session.
- If, after sending a release, the released requirements of the nonreferenced schedule are deleted, you can run the Generate Release Lines (tdpur3222m000) session to create a release with no requirements. Because no lines are available for clustering, LN creates a release line for the item with a quantity of zero in the Purchase Release Line - Details (tdpur3522m000) session. In this way, the supplier is informed about the cancellation of the previously communicated requirements. For referenced schedules, LN automatically communicates the cancellation to the supplier. For more information, refer to *Zero required quantity for sales schedule lines (p. 113)*.
- For nonreferenced schedules that must be sent in a purchase release, LN retrieves a purchase schedule's warehouse from the Purchase Schedules (tdpur3110m000) session. For referenced schedules, however, LN retrieves the purchase schedule's warehouse from the Purchase Schedule Lines (tdpur3111m000) session, which can differ from line to line. As a result, the schedule lines of the same pull call-off schedule can be stored under different purchase releases.
- You can print the differences between two release revisions of a purchase release in the Print Purchase Release Variance Reports (tdpur3422m100) session.
- You can delete purchase release revisions in the Delete Purchase Revisions (tdpur3222m200) session.

Clustering purchase schedule lines

Clustering is used to group several nonreferenced schedules lines in one purchase release.

With clustering, you can do the following:

- Reduce the number of schedule lines that must be processed. Especially those lines for which no accurate planning is required yet, can be grouped.
- Give the supplier a clear view of the schedule lines without having to bother about schedule origin.

Conditions for clustering

For one purchase schedule, several schedule lines can be generated with the same characteristics (common buy-from business partner, ship-from business partner, release type, shipment based schedule/ delivery based schedule, communication method), which differ only in their origin. These schedule lines, which are stored under one purchase release, can have different planned receipt dates (or planned shipment dates) that fall in one specific period. The schedule lines that fall in that specific period, determined by the applicable segment, which is derived from the schedule's applicable segment set, can be clustered and put together in the Purchase Release Line - Details (tdpur3522m000) session.

Note

In the Purchase Release Line - Details (tdpur3522m000) session, schedule lines are only clustered in the same purchase release line detail if the following fields on the schedule lines are the same:

- **Purchase Unit**
- **Purchase Price Unit**
- **Price**
- **Warehouse**
- **Address**
- **Option List ID**
- **Exempt**
- **Tax Country**
- **Tax Code**
- **Own Tax Number**
- **BP Tax Country**
- **BP Tax Number**
- **Exempt Reason**
- **Exempt Certificate**
- **Preferred Manufacturer Part Number**
- **Manufacturer**
- The contents of the MPN sets that are linked to the purchase schedule lines.
- **Item Revision**

The following fields, which are derived from the **Schedule Quantity**, but are defined in Common, must also match to cluster several schedule lines into one release line detail:

- **Conversion Factor Purchase to Inventory Unit**
- **Conversion Factor Price to Inventory Unit**
- **Length**
- **Width**
- **Height**

The way in which *tax* fields are used in a purchase release, depends on the value of the **Tax on Purchase Release Line level** field in the Purchase Contract Parameters (tdpur0100m300) session.

Using segment sets for clustering

To cluster schedule lines, first the next schedule issue date must be determined. This date is derived from the schedule's applicable issue pattern, which is defaulted from the Purchase Contract Line Logistic Data (tdpur3102m000) session or the Items - Purchase Business Partner (tdipu0110m000) session.

Note

- You can define patterns in the Patterns (tcccp0690m000) session.
- On the schedule issue date, schedule lines are always clustered from 00:00 hours on and not from the time that is indicated by the issue date.

Example

- Release type: material release.
- Next schedule issue date: 26/07/99 10:00 hrs.

Segments in the segment set for material release:

Segment	Segment time unit	Segment length
1	Week	1
2	Four Weeks	1
3	Four Weeks	1

Schedule (SCH001) requirements in schedule lines:

Position number	Origin	Planned receipt date	Quantity
10	EP	23/07/99	15
20	EP	26/07/99	10
30	Manual	28/07/99	10
40	EP	03/08/99	15
50	Manual	10/08/99	15
60	EP	24/08/99	20
70	EP	31/08/99	20

Creation of clustered lines:

Release number	Release revision	Schedule number	Release position	Start date	End date	Quantity

REL001	0	SCH001	1	26/07/99	01/08/99	20
REL001	0	SCH001	2	02/08/99	29/08/99	50
REL001	0	SCH001	3	30/08/99	26/09/99	20

All scheduline lines that fall within one week, calculated from the next schedule issue date on, are clustered in one release line detail (segment 1). After this period, all schedule lines that fall within the next four weeks are clustered in another release line detail (segment 2). Finally, the schedule lines that fall within the next four weeks are clustered in the last release line detail.

Note

- If schedule lines exist with planned receipt/shipment dates that fall before the next schedule issue date, these lines are inserted as immediate requirements in the Purchase Release Line - Details (tdpur3522m000) session for receipt based schedules.
- If a period is undefined between two segments, LN automatically adds another segment that fills this time gap, so the schedule lines that fall in this time gap are also included in the clustering process. All the schedule lines that fall within the time period of that newly generated segmen,t are clustered into one release line detail. For more information, refer to *Using segment sets (p. 10)*.
- If the first segment time unit of the first segment in a segment set is set to **Week**, **Four Weeks**, or **Month**, which are all segment time units that have Monday as a starting point for their activities, and if the calculated schedule issue date does not fall on a Monday, some days can be excluded from the clustering process. For more information, refer to *Using segment sets (p. 10)*.

Overall process for clustering schedule lines

1. To cluster schedule lines, you can run the Generate Release Lines (tdpur3222m000) session. The clustered schedule lines are stored in the Purchase Release Line - Details (tdpur3522m000) session with the status **Created**. The linked release line in the Purchase Release (tdpur3121m000) session, also has the status **Created**.
2. If you agree to the release line detail with the status **Created** and you do not want to change the release line detail, you can approve the line (detail) in the Approve Release Lines (tdpur3222m100) session. The clustered lines in the Purchase Release Line - Details (tdpur3522m000) session and the release line in the Purchase Release (tdpur3121m000) session receive the status **Scheduled**.
3. As soon as the release line with the status **Scheduled** is printed in the Print Purchase Releases (tdpur3422m000) session with the **Final Report** check box selected, or when EDI messages are automatically generated and sent, the clustered lines in the Purchase Release Line - Details (tdpur3522m000) session and the release line in the Purchase Release (tdpur3121m000) session receive the status **Sent**.

Updating clustered schedule lines

If you check the clustered schedule lines with the status **Created** in the Purchase Release Line - Details (tdpur3522m000) session, and you do not want these lines to be approved in this format, or if you check the clustered schedule lines with the status **Scheduled** and you do not want the lines to be sent to the supplier in this format, you can update the lines. To update the release line (detail) of a nonreferenced schedule, take the following steps:

1. In the Purchase Release Line - Details (tdpur3522m000) session, select a record.
2. On the appropriate menu of the Purchase Release Line - Details (tdpur3522m000) session, click **Purchase Schedule Lines**, which will start the Purchase Schedule Lines (tdpur3111m000) session.
3. Double-click the schedule line that you want to update and make the change.
4. On the appropriate menu of the Purchase Release Line - Details (tdpur3522m000) session, click **Update Release**. The release is now updated with the changes you made on the schedule line(s).

Receiving clustered schedule lines

If a supplier sends the goods based on the clustered lines, and goods are received in Warehousing against a blanket warehouse order, the received quantity is distributed over the push schedule lines, based on the following rule:

Received quantity is booked in the **Received Quantity** field of the Purchase Schedule Lines (tdpur3111m000) session for the purchase schedule line that has the oldest unfulfilled requirement of the type immediate or firm. For more information, refer to Blanket warehousing orders.

A purchase schedule line is unfulfilled if:

- The delivered quantity is less than the ordered quantity.
- The ordered quantity is equal to the delivered quantity, but the sum of the approved quantity and the rejected quantity is less than the delivered quantity.

Note

- No receipts can be made on schedule lines with the planned requirement type.
- If no unfulfilled purchase schedule lines can be found, goods cannot be received on a purchase schedule.

Receipts on push schedule lines

For push schedules, goods are usually received against a blanket warehouse order and the purchase release usually contains clustered schedule lines. When goods are received, the goods are distributed over the schedule lines with the oldest unfulfilled requirement of the type **Immediate** or **Firm**.

For more information on:

- Blanket warehousing orders, refer to Blanket warehousing orders.

- The integration between Procurement and Warehousing when goods are received on a blanket warehousing order, refer to *Purchase schedule cumulatives (p. 52)*.
- Clustering schedule lines, refer to *Clustering purchase schedule lines (p. 39)*.

Note

If the item on the push schedule is project pegged, project peg information is linked to a schedule line. In this case, receipts against a blanket warehouse order are assigned based on the priority in the purchase schedule line peg (distribution). For more information, refer to Project pegging in Procurement.

Receipt correction

If receipts are made in Warehousing, and the goods are not yet inspected, you can correct the delivered quantity in the Receipt Correction (whinh3121s000) session.

Note

For inspected receipts, no receipt correction is possible. Whether or not goods must be inspected upon receipt depends on the value of the **Inspection** check box in the Purchase Contract Lines (tdpur3101m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session.

If goods must be inspected, the **Approved Quantity** and **Rejected Quantity** fields in the Purchase Schedule Lines (tdpur3111m000) and Purchase Schedule - Receipts (tdpur3115m200) sessions are retrieved from Warehousing. If these fields are filled, you cannot correct the receipt for the inspected quantity.

If goods must not be inspected, the **Approved Quantity** field is equal to the **Received Quantity** field in the Purchase Schedule Lines (tdpur3111m000) session and the Purchase Schedule - Receipts (tdpur3115m200) session. The rejected quantity is always zero. Unless the quantities received are invoiced, you can always perform a receipt correction.

Note

When the purchase schedule line is invoiced, you can no longer update the receipt in Warehousing. However, you can/must still update the received CUMs in the Update Received CUMs (tdpur3432m000) session.

Increasing the delivered quantity

If, in Warehousing, the delivered quantity is increased after prior confirmation of a receipt, LN takes the following steps:

1. Goods are assigned to (the) schedule line(s) with the oldest unfulfilled requirement of the type **Immediate** or **Firm** in the Purchase Schedule Lines (tdpur3111m000) session.
2. In the Purchase Schedule - Receipts (tdpur3115m200) session, an entry is created if the goods are assigned to a new schedule line, or a record is updated if the goods are added to a schedule line on which goods are received, but that is not fulfilled yet.
3. The Received Cumulatives (tdpur3132m000) session is updated.

Decreasing the delivered quantity

If, in Warehousing, the delivered quantity is decreased after prior confirmation of a receipt, goods must be taken from the schedule lines with the youngest requirement. Following the general rule of modifying the youngest requirements, no logical relationship would exist anymore between the delivered quantity and a combination of schedule position number, receipt number, packing slip number, and receipt date in the Purchase Schedule - Receipts (tdpur3115m200) session.

For this reason, LN takes the following steps:

1. In the Purchase Schedule Lines (tdpur3111m000) session, the youngest requirement is selected that contains a delivered quantity. Of this purchase schedule line, the **Received Quantity** field and the **Approved Quantity** field (in case goods need not be inspected) are modified until the delivered quantity is zero. Then, the next (youngest) requirement that meets this condition is selected, and so on.
2. In the Purchase Schedule - Receipts (tdpur3115m200) session, a new record is created for the combination of schedule number, receipt number, packing slip number, and receipt date with a negative delivered quantity and a negative approved quantity.
3. Planned inventory transactions are updated for the selected purchase schedule line(s).
4. Accounts Payable is updated about the adjusted purchase schedule line(s).
5. In the Received Cumulatives (tdpur3132m000) session, the received quantity and the received cumulative are updated for a combination of schedule number, receipt number, packing slip number, and receipt date. All successive received CUMs are also updated with the new quantity.

Example

In Warehousing, on 11 February, a receipt is confirmed for 20 pieces. An inspection is carried out for 10 pieces of which three pieces are rejected and seven pieces are approved. On 13 February, a receipt is confirmed for five pieces. Those five pieces must still be inspected. The following tables show the information that is written to successively the Purchase Schedule Lines (tdpur3111m000) session and the Purchase Schedule - Receipts (tdpur3115m200) session.

Schedule line	Requirement date	Required quantity	Receipt date	Delivered quantity	Approved quantity	Rejected quantity
10	13/2/2001	15	11/2/2001	15	7	3
20	14/2/2001	5	11/2/2001	5	0	0
30	15/2/2001	5	13/2/2001	5	0	0
40	16/2/2001	8	-	-	-	-

Schedule line	Receipt number	ASN number	Packing slip number	Receipt date	Delivered quantity	Approved quantity	Rejected quantity
10	RCP0001	BP001	PS0001	11/2/2001	15	7	3
20	RCP0001	BP001	PS0001	11/2/2001	5	0	0
30	RCP0002	BP002	PS0002	15/2/2001	5	0	0
40	-	-	-	-	-	-	-

Now, a receipt correction is performed on the receipt number RCP0001. Instead of receiving 20 pieces, the delivered quantity is changed to 12. Less than 10 pieces is not allowed because 10 pieces are already inspected and approved or rejected.

The following tables show the result of the receipt correction, in the Purchase Schedule Lines (tdpur3111m000) session and the Purchase Schedule - Receipts (tdpur3115m200) session.

Schedule line	Requirement date	Required quantity	Receipt date	Delivered quantity	Approved quantity	Rejected quantity
10	13/2/2001	15	11/2/2001	15	7	3
20	14/2/2001	5	11/2/2001	2	0	0
30	15/2/2001	5	13/2/2001	0	0	0
40	16/2/2001	8	-	-	-	-

Schedule line	Receipt number	ASN number	Packing slip number	Receipt date	Delivered quantity	Approved quantity	Rejected quantity
10	RCP0001	BP001	PS0001	11/2/2001	15	7	3
20	RCP0001	BP001	PS0001	11/2/2001	2	0	0

30	RCP0002	BP002	PS0001	13/2/2001	5	0	0
	RCP0002	BP001	PS0001	11/2/2001	-5	0	0
40	-	-	-	-	-	-	-

Inspecting scheduled items

If scheduled items must be inspected upon receipt, approved and rejected quantities are retrieved from Warehousing. The type of schedule, push schedule or pull call-off schedule, determines how the inspection results are communicated to Procurement.

Note

The **Inspection** check box in the Purchase Contract Lines (tdpur3101m000) session or the Items - Purchase Business Partner (tdipu0110m000) session determines if scheduled goods must be inspected after a receipt is confirmed.

If goods must not be inspected, Warehousing does not approve or reject the received goods. Therefore, in the Purchase Schedule Lines (tdpur3111m000) and the Purchase Schedule - Receipts (tdpur3115m200) sessions, the **Approved Quantity** field is equal to the **Received Quantity** field. The **Rejected Quantity** field is always zero.

Pull call-off schedules

If goods are inspected for a pull call-off schedule, LN completes these steps:

1. **Purchase Schedule - Receipts (tdpur3115m200)**
   Searches for the unique combination of **Schedule**, **Receipt Number**, **Packing Slip**, **Receipt Date**, and **Suppliers ASN Number** number.
2. Updates the **Rejected Quantity** and **Approved Quantity** fields with the inspection results.
3. **Purchase Schedule Lines (tdpur3111m000)**
   Searches for the unique combination of **Schedule** and **Reference ID**.
4. Updates the **Rejected Quantity** and **Approved Quantity** fields with the inspection results.

Push schedules

If goods are inspected for a push schedule, LN completes these steps: :

1. **Purchase Schedule - Receipts (tdpur3115m200)**
   Searches for a combination of **Schedule**, **Receipt Number**, **Packing Slip**, **Receipt Date**, and **Suppliers ASN Number** number. Because one receipt can be made for several purchase schedule lines, several combinations can be found in the Purchase Schedule - Receipts (tdpur3115m200) session.

2. Updates the **Rejected Quantity** and **Approved Quantity** fields with the inspection results. If several records are found in the Purchase Schedule - Receipts (tdpur3115m200) session, LN:
   - Distributes the inspection results over the purchase schedule receipt detail records in the sequence of record with the oldest requirement date through the record with the youngest requirement date.
   - First distributes the approved quantity and then the rejected quantity over the purchase schedule receipt detail records.
3. **Purchase Schedule Lines (tdpur3111m000)**
   Searches for the purchase schedule line(s) that is/are linked to the updated record(s) in the Purchase Schedule - Receipts (tdpur3115m200) session.
4. Updates the **Rejected Quantity** and **Approved Quantity** fields with the inspection results.

Example

The following table shows the records in the Purchase Schedule - Receipts (tdpur3115m200) session after receipts are confirmed in Warehousing and before goods are inspected for a push schedule.

- Schedule number: 1000001
- Receipt number : 1
- ASN number : BP001
- Packing Slip : PS001

Schedule line	Requirement date	Receipt date	Required quantity	Received quantity	Approved quantity	Rejected quantity
10	13/2/2001	11/2/2001	10	10	-	-
20	14/2/2001	11/2/2001	5	5	-	-
30	15/2/2001	11/2/2001	20	5	-	-

Seven pieces are now inspected in Warehousing, of which three pieces are rejected and four pieces are approved. The following table shows the distribution of the inspection results in the Purchase Schedule - Receipts (tdpur3115m200) session.

Schedule line	Requirement date	Receipt date	Required quantity	Received quantity	Approved quantity	Rejected quantity
10	13/2/2001	11/2/2001	10	10	4	3
20	14/2/2001	11/2/2001	5	5	0	0
30	15/2/2001	11/2/2001	20	5	0	0

Finally, 13 pieces are inspected of which five pieces are rejected and eight pieces are approved. The following table shows the inspection results in the Purchase Schedule - Receipts (tdpur3115m200) session.

Schedule line	Requirement date	Receipt date	Required quantity	Received quantity	Approved quantity	Rejected quantity
10	13/2/2001	11/2/2001	10	10	7	3
20	14/2/2001	11/2/2001	5	5	5	0
30	15/2/2001	11/2/2001	20	5	0	5

Note

If receipts are made in Warehousing, and the goods are not yet inspected, you can correct the delivered quantity in the Receipt Correction (whinh3121s000) session for push schedules. For more information, refer to *Receipts on push schedule lines (p. 43)*.

Purchase schedule authorizations and cumulatives

Purchase schedule authorizations

Suppliers ship purchase schedule items based on the requirement type. The **Firm** requirement type, however, can deviate from the earlier received **Planned** requirement type.

If you use authorizations, before the **Firm** requirement type is communicated, a buyer gives a supplier permission to fabricate goods or to buy raw materials up to a certain quantity level. The essence of an authorization is that you bear the risk if you do not need the goods. In other words, you must pay for the fabrication and/or raw materials, whether or not the goods are actually required.

Authorizations

The following types of authorizations are available:

- Fab authorization
- High fab authorization
- Raw authorization
- High raw authorization

To use authorizations, take the following steps:

1. Select the **Authorizations** check box in the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session.
2. If you want to give a FAB authorization, define a FAB period in the **FAB Period** field of the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session.
3. If you want to give a RAW authorization, define a RAW period in the **RAW Period** field of the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session.

In the FAB/RAW Authorizations (tdpur3534m000) session, you can view the various authorizations for a specific purchase schedule.

Authorizations for the schedule are updated in the FAB/RAW Authorizations (tdpur3534m000) session as soon as:

- The authorizations and cumulatives are reset in the Reset Cumulatives (tdpur3230m000) session.
- A purchase release receives the **Sent** status. As a result, most of the fields in the FAB/RAW Authorizations (tdpur3534m000) session are defaulted from the Purchase Release (tdpur3121m000) session.

Note

Authorizations are used only for non-referenced schedules that are sent to the supplier in a material release.

Calculating FAB and RAW authorizations for push schedules

FAB and RAW authorizations are calculated from the schedule issue date.

- **FAB Authorization**
  Required CUM on the schedule issue date + requirements of released schedule lines for which no receipts are booked yet on the schedule issue date + sum of all schedule requirements that fall into the FAB period.
- **RAW Authorization**
  Required CUM on the schedule issue date + requirements of released schedule lines for which no receipts are booked yet on the schedule issue date + sum of all schedule requirements that fall into the RAW period.

Calculating FAB and RAW authorizations for pull-forecast schedules

FAB and RAW authorizations are calculated from the current date.

- **FAB Authorization**
  Required CUM on the current date + requirements of released schedule lines for which no receipts are booked yet on the current date + sum of all schedule requirements that fall into the FAB period.
- **RAW Authorization**
  Required CUM on the current date + requirements of released schedule lines for which no receipts are booked yet on the current date + sum of all schedule requirements that fall into the RAW period.

Note

- The pull forecast schedule retrieves the required CUM from the pull call-off schedule, as stored in the Required Cumulatives (tdpur3130m000) session.
- For pull forecast schedules, you cannot use the schedule issue date to calculate the FAB and RAW authorizations, because pull call-off schedules are not released based on schedule issue date. If you use the schedule issue date, several call-off schedule lines can be excluded from the FAB and RAW calculation, because of the short horizon of these schedule lines. Therefore, the current date is used, which can be one of the following:
  - The date on which release lines are generated in the Generate Release Lines (tdpur3222m000) session.
  - The date on which a release is updated, which you can perform by clicking **Update Release** on the appropriate menu of the Purchase Release Line - Details (tdpur3522m000) session.
  - The date on which a release is rebuilt, which you can perform by selecting the **Rebuild Release** check box in the Approve Release Lines (tdpur3222m100) session.

Example Authorization

Requirement type	Time period
Firm	01/01 - 15/01
Planned	15/01 --->

- The time period from 01/01 - 15/01 contains real orders. The delivery is certain.
- For the time period from 15/01 - 01/02, you can give, for instance, a FAB authorization.
- For the time period from 01/02 - 15/02, you can give, for instance, a RAW authorization.

Example High authorization

period	FAB authorization	High FAB authorization	Schedule issue date
15/1 - 1/2	100	100	1/1
15/1 - 1/2	150	150	5/1
15/1 - 1/2	125	150	10/1

Note

The period during which high authorizations are valid, is calculated from the current CUM reset date through the moment the CUM reset date is reset in the Reset Cumulatives (tdpur3230m000) session.

Sometimes an authorization must be adjusted. In this case, the highest authorization that is given to the buy-from business partner for the specific period is valid. In other words, the buyer must pay the highest authorized quantity for the specific period.

Purchase schedule cumulatives

Purchase schedule cumulatives (CUMs) are used to do the following:

- Keep track of a schedule's total ordered and received quantities
- Calculate overdeliveries and underdeliveries for push schedules
- Inform the supplier on the received quantity

Cumulatives

In Procurement, the following CUMs are supported:

- Shipped cumulatives, which can be viewed in the Shipped Cumulatives (tdpur3131m000) session.
- Received cumulatives, which can be viewed in the Received Cumulatives (tdpur3132m000) session.
- Required cumulatives, which can be viewed in the Required Cumulatives (tdpur3130m000) session.
- Invoiced cumulatives, which can be viewed in the Invoiced Cumulatives (tdpur3133m000) session.

When a purchase schedule is released, LN inserts records in the previously mentioned sessions in the following order:

1. A shipped cumulative record is inserted/updated when an advance shipment notice is received from the supplier. The shipped quantity communicated by the supplier is inserted.

2. A received cumulative record is inserted/updated when a receipt is made in Warehousing. The actually received quantity is inserted.
3. A required cumulative record is inserted/updated when a receipt is confirmed in Warehousing. The total required quantity for the schedule line(s) is inserted.
4. An invoiced cumulative record is inserted when an invoice is approved in Financials.

In general, cumulatives are calculated and updated based on schedule number, CUM reset date, and transaction date, which can be the shipment date, receipt date, planned requirement date, or invoice date. The schedule number and the transaction date are determined when the transaction takes place.

Note

You can reset the cumulatives in the Reset Cumulatives (tdpur3230m000) and Reset Cumulatives by Contract Total Line (tdpur3230m100) sessions.

Cumulative models

Two cumulative models exist based on which the communicated cumulatives are used in a logistic company.

In the **Model for CUMs** field of the Purchase Contract Parameters (tdpur0100m300) session, you can select one of the following models:

- **Receipt based CUM model**
  In receipt based schedules, the supplier's position is taken into account. As a result, in case of an underdelivery, schedule lines with a planned requirement date that falls before the next schedule issue date are inserted as immediate requirements in the Purchase Release Line - Details (tdpur3522m000) session. Furthermore, the total received CUM is communicated to the supplier.
- **Order based CUM model**
  Order based schedules are independent of the supplier's position. In case of an overdelivery or underdelivery, suppliers are responsible for calculating their position in relation to the demand. As a result, all ordered quantities are communicated to the supplier, after which the supplier subtracts the shipped quantity from the ordered quantity. To have more information on how the supplier handles underdeliveries and overdeliveries, refer to *Adjusting sales schedules (p. 129)*.

Note

For push schedules, goods are usually received against a blanket warehouse order and the purchase release usually contains clustered schedule lines. In case of a receipt of goods, the goods are distributed over the schedule lines with the oldest unfulfilled requirement of the type Immediate or Firm. For more information, refer to *Clustering purchase schedule lines (p. 39)*.

Example

Schedule Number 10000001

Requirement date	Position no.	Ordered Qty.	Delivered Qty.	Requirement type	Price
11/01/2001	10	5 pieces	0 pieces	firm	10
12/01/2001	20	5 pieces	0 pieces	firm	10
13/01/2001	30	5 pieces	0 pieces	firm	10

If, on 10 January 2001, a receipt is confirmed of seven pieces, receipt 0001, packing slip 001, the following steps are performed/ the following information is exchanged between Purchase Control and Warehousing:

Step 1: Select purchase schedule lines

The purchase schedule lines are selected in the sequence of oldest unfulfilled requirement of the type Firm. This means that first receipts are booked on the requirement of 11 January 2001, then on the requirement of 12 January 2001, and so on. Receipts can be booked on schedule lines for a maximum of the ordered quantity.

In our example, a receipt of seven pieces is booked as follows:

- 11 January 2001: although seven pieces are delivered, five pieces can be received on this line.
- 12 January 2001: although the ordered quantity is five pieces, only two pieces of the actually delivered quantity are assigned to this line (five pieces are assigned to the schedule line of 11 January 2001, which is older). This means that this line is only partially delivered.

Step 2: Update purchase schedule lines

The purchase schedule lines are updated in the Purchase Schedule Lines (tdpur3111m000) session.

Requirement date	Position no.	Ordered Qty.	Delivered Qty.	Requirement type	Price
11/01/2001	10	5 pieces	5 pieces	firm	10
12/01/2001	20	5 pieces	2 pieces	firm	10
13/01/2001	30	5 pieces	0 pieces	firm	10

Step 3: Insert receipt details

The receipt details are updated in the Purchase Schedule - Receipts (tdpur3115m200) session.

Position no.	Receipt no.	Packing slip no.	Delivered Qty.	Approved Qty	Rejected Qty
10	RCP0001	PS001	5 pieces	0	0
20	RCP0001	PS001	2 pieces	0	0

Step 4: Update planned inventory transactions

Planned inventory transactions are updated in Warehousing.

Position no.	Delivery date	Quantity
10	11/01/2001	0 pieces
20	12/01/2001	3 pieces
30	13/01/2001	5 pieces

Step 5: Update received cumulatives

The received cumulatives are updated in the Received Cumulatives (tdpur3132m000) session.

Receipt no.	Packing slip no.	Transaction date	Received quantity	Received CUM
RCP0001	PS001	10/1/2001	7	7

Step 6: Update required cumulatives

The required cumulatives are updated in the Required Cumulatives (tdpur3130m000) session.

Planned requirement date	Required quantity	Required CUM
11/01/2001	5	5
12/01/2001	5	10

Resetting authorizations

Over time, the FAB authorizations and RAW authorizations can be incremented to very high values. To decrease these values, when resetting the CUMs in the Reset Cumulatives (tdpur3230m000) and Reset Cumulatives by Contract Total Line (tdpur3230m100) sessions, the FAB/RAW authorizations are also reset. Similar to the cumulatives, authorizations cannot be reset exactly when the year is changing. As a result, updates can be stored in the FAB/RAW Authorizations (tdpur3534m000) session after the reset date. By calculating a reset quantity, these values are also included in the reset process.

Resetting is carried out based on the following cumulative (CUM) models, which you can define in the **Model for CUMs** field of the Purchase Contract Parameters (tdpur0100m300):

- Order based CUM model
- Receipt based CUM model

Conditions for successfully resetting the FAB/RAW authorizations

- Suppliers and customers must use the same CUM reset date when resetting the cumulatives in the Reset Cumulatives (tdpur3230m000), Reset Cumulatives by Contract Total Line (tdpur3230m100), and Reset Cumulatives (tdsls3230m000) sessions.
- Resetting can only take place when the releases sent by the customer, are received and approved by the supplier. If not, suppliers cannot approve releases that are processed after the reset date, because the reset dates are different. Purchase release lines with the status **Created**, or **Scheduled** are automatically reset.
- Suppliers must not update incoming releases or manually create new releases, because resetting can then result in wrong quantities.

To calculate the reset quantity

To reset the existing FAB/RAW authorization values, the reset quantity is determined and subtracted from the existing FAB/RAW authorization values.

Based on the CUM model, the reset quantity is calculated as follows:

- **Order Based CUM model**
  Reset Quantity = last required quantity that is communicated on a release date that is prior to the new reset date. This quantity is retrieved from the **Required CUM** field of the FAB/RAW Authorizations (tdpur3534m000) session.

- **Receipt Based CUM model**
  Reset Quantity = last received quantity that is communicated on a release date that is prior to the new reset date. This quantity is retrieved from the **Received CUM** field of the FAB/RAW Authorizations (tdpur3534m000) session.

To reset high FAB authorizations/high RAW authorizations

How the high FAB authorizations and high RAW authorizations are reset is based on the setting of the **Authorizations to be** parameter in the Purchase Contract Line Logistic Data (tdpur3102m000) session and/or the Items - Purchase Business Partner (tdipu0110m000) session:

- **Carried Forward**
  The high FAB authorizations and high RAW authorizations are reduced by the reset quantity.
- **Reset**
  The high FAB authorizations and high RAW authorizations are equalized to the FAB authorization and RAW authorization values.

Example

- FAB period = 4 weeks.
- Cumulative model = **Order Based**.
- Reset date = start week 3.
- The schedule lines are generated before the reset takes place.
- Schedule line 2 is released in week 3.
- Schedule line 3 is released in week 5.

Week	Line 1	-	Line 2	-	Line 3	-	CUMs after reset
-	Qty.	CUM	Qty.	CUM	Qty.	CUM	-
1	20	20	-	20	-	20	20
2	20	40	-	40	-	40	40
3	20	60	5	45	-	45	5
4	20	80	5	50	-	50	10
5	20	100	5	55	20	70	30
6	20	120	55	110	5	75	35
7	-	-	5	115	5	80	40

8	-	-	5	120	5	85	45
9	-	-	-	-	5	90	50
10	-	-	-	-	5	95	55

Authorizations to be **Carried Forward**

TOTALS	CUM Line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10
FAB	80	110	85	45
High FAB	80	110	110	70

The reset date starts in week 3. Because of the **Order Based** CUM model, resetting is performed based on the required cumulatives. At the end of week 2, the reset quantity is 40. When Authorizations must be **Carried Forward**, the authorization cumulatives are updated by -40 from the reset date on (week 3).

If you take the same example, however, with the authorizations reset rather than carried forward, the high FAB is not updated but equalized to the FAB quantity. The calculation then arrives at:

TOTALS	CUM Line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10
FAB	80	110	85	45
High FAB	80	110	110	45

Note

- (High) FAB and (high) RAW are only recalculated for records that belong to material releases, not shipping schedules.
- In the Purchase Release (tdpur3121m000) session, FAB and RAW related fields of purchase release lines with the status **Created** or **Scheduled**, are also reset.

Resetting purchase schedule cumulatives

Over time, a purchase schedule's cumulatives (CUMS) can be incremented to very high values. To decrease these values, you can reset the CUMs in the Reset Cumulatives (tdpur3230m000) and Reset Cumulatives by Contract Total Line (tdpur3230m100) sessions. Although this reset is usually performed at the end of the year, the CUMs cannot be reset exactly when the year is changing. This means that updates can be stored in the cumulative sessions after the reset date. By calculating a reset quantity, these values are also included in the reset process.

Resetting is carried out based on the following cumulative (CUM) models, which you can define in the **Model for CUMs** field of the Purchase Contract Parameters (tdpur0100m300):

- Order based CUM model
- Receipt based CUM model

Conditions for successfully resetting the cumulatives:

- Suppliers and customers must use the same CUM reset date when resetting the cumulatives in the Reset Cumulatives (tdpur3230m000), Reset Cumulatives by Contract Total Line (tdpur3230m100), and Reset Cumulatives (tdsls3230m000) sessions.
- Resetting can only take place when the releases sent by the customer, are received and approved by the supplier. If not, suppliers cannot approve releases that are processed after the reset date, because the reset dates are different. Purchase release lines with the **Created**, or **Scheduled** status are automatically reset.
- Suppliers must not update incoming releases or manually create new releases, because resetting can then result in wrong quantities.

To calculate the reset quantity

To reset the existing CUM values, the reset quantity is determined and subtracted from the existing CUMs. In the Shipped Cumulatives (tdpur3131m000), Received Cumulatives (tdpur3132m000), Required Cumulatives (tdpur3130m000), and the Invoiced Cumulatives (tdpur3133m000) sessions, a reset record is added and the CUMs are reduced by the reset quantity. Furthermore, the FAB/RAW Authorizations (tdpur3534m000) session is reset and the release lines that are generated, but not yet sent, are reset.

Based on the CUM model, the reset quantity is calculated as follows:

- **Order Based CUM model**
  Reset Quantity = last required quantity that is communicated on a release date that is prior to the new reset date. This quantity is retrieved from the **Required CUM** field of the FAB/RAW Authorizations (tdpur3534m000) session.
- **Receipt Based CUM model**
  Reset Quantity = last received quantity that is communicated on a release date that is prior to the new reset date. This quantity is retrieved from the **Received CUM** field of the FAB/RAW Authorizations (tdpur3534m000) session.

Example 1 - Order Based CUM model

- Reset date = start week 3

- The schedule lines are generated before the reset takes place
- Schedule line 2 is released in week 3
- Schedule line 3 is released in week 5

Week	Line 1	Required CUM before reset	Line 2	Required CUM before reset	Line 3	Required CUM before reset	Required CUM after re-set
1	20	20	-	20	-	20	20
2	20	40	-	40	-	40	40
3	20	60	5	45	-	45	5
4	20	80	5	50	-	50	10
5	20	100	5	55	20	70	30
6	20	120	55	110	5	75	35
7	-	-	5	115	5	80	40
8	-	-	5	120	5	85	45
9	-	-	-	-	5	90	50
10	-	-	-	-	5	95	55

TOTALS	CUM line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10

The reset date starts in week 3. Because of the **Order Based** CUM model, resetting is carried out based on the required cumulatives. At the end of week 2, the reset quantity is 40. As a result, all CUMs are updated by -40 from the CUM reset date (week 3) on.

Example 2 - Receipt Based CUM model

Take the same data from the previous example, but also take into consideration the following data:

Week	Received quantity	Received CUM before reset	Received CUM after reset
1	10	10	10
2	25	35	35
3	20	55	20
4	-	55	20
5	5	60	25

The reset date starts in week 3. Because of the **Receipt Based** CUM model, resetting is done based on the received cumulatives. At the end of week 2, the reset quantity is 35. As a result, all CUMs are updated by -35 from the CUM reset date (week 3) on.

The totals from example 1 would then arrive at:

TOTALS	CUM line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	15

Logging transactions for purchase schedule lines

Inventory transactions and financial transactions are logged for purchase schedule lines based on the parameter defined in the **Transaction Time Fence** field of the Purchase Contract Line Logistic Data (tdpur3102m000) session / Items - Purchase Business Partner (tdipu0110m000) session.

When you change a purchase schedule line and its status changes as a result, LN logs the following transactions in Warehouse Orders under Warehousing, and in Accounts Payable under Financials.

Warehouse Orders

ORIGINAL STATUS	NEW STATUS	ACTION
Created	Created	7
Created	Approved	1
Created	Disapproved	7
Created	Canceled	7
Approved	Created	3
Approved	Approved	1
Approved	Disapproved	3
Approved	ASN Received	7
Approved	Partial Receipt	2
Approved	Final Receipt	2
Approved	Canceled	3
Disapproved	Created	7
Disapproved	Approved	5
Disapproved	Disapproved	7
Disapproved	Canceled	4
ASN Received	ASN Received	1
ASN Received	Order Generated	6
ASN Received	Partial Receipt	2
ASN Received	Final Receipt	2

Order Generated	Order Generated	1
Order Generated	ASN Received	6
Order Generated	Partial Receipt	2
Order Generated	Final Receipt	2
Order Generated	Canceled	3
Partial Receipt	Partial Receipt	2
Partial Receipt	Final Receipt	2
Final Receipt	Partial Receipt	2
Final Receipt	Final Receipt	2
Final Receipt	Invoiced	7
Invoiced	Invoiced	7
Processed/Deleted	Processed/Deleted	7
Canceled	Processed/Deleted	7
Canceled	Canceled	7

LEGEND

1	If transactions were already logged, negative and positive transactions are logged to avoid rounding problems.
2	If the receipt is made for a blanket warehousing order, Purchase Control determines how the financial transactions are booked. If the receipt is made for a pull call-off schedule, the financial transactions are determined by and handled in Warehousing. If

	the receipt is made for a cost or service item in Purchase Control, transactions are handled in the Purchase Schedule - Receipts (tdpur3115m200) session.
3	If transactions were already logged, the transactions are reversed.
4	No transactions are logged. Negative transactions were already logged when the status changed to Disapproved.
5	If transactions must be logged (based on the **Transaction Time Fence** parameter), positive transactions are logged.
6	No transactions are logged, because quantities were not changed.
7	No transactions are logged.

Accounts Payable

ORIGINAL STATUS	NEW STATUS	ACTION
Created	Created	4
Created	Approved	1
Created	Disapproved	4
Created	Canceled	2
Approved	Created	2
Approved	Approved	1
Approved	Disapproved	2
Approved	ASN Received	4
Approved	Partial Receipt	3
Approved	Final Receipt	3
Approved	Canceled	2
Disapproved	Created	4
Disapproved	Approved	1
Disapproved	Disapproved	4
Disapproved	Canceled	4
ASN Received	ASN Received	1
ASN Received	Order Generated	4
ASN Received	Partial Receipt	3
ASN Received	Final Receipt	3

Order Generated	Order Generated	1
Order Generated	ASN Received	4
Order Generated	Partial Receipt	3
Order Generated	Final Receipt	3
Order Generated	Canceled	2
Partial Receipt	Partial Receipt	3
Partial Receipt	Final Receipt	3
Final Receipt	Partial Receipt	3
Final Receipt	Final Receipt	3
Final Receipt	Invoiced	4
Invoiced	Invoiced	4
Processed/Deleted	Processed/Deleted	4
Canceled	Processed/Deleted	4
Canceled	Canceled	4

LEGEND

1	The purchase schedule is deleted and created in Accounts Payable.
2	The purchase schedule is deleted in Accounts Payable.
3	The receipt for the schedule is updated in Accounts Payable.

4	No action.

Purchase order and schedule history

You can use purchase order and schedule history to track creations and modifications to purchase orders and schedules. You can keep certain information after the original purchase order or schedule is removed.

To register the history of orders and schedules that are created, canceled, or processed, select these check boxes:

- **Purchase orders**
  Log Order History and **Log Actual Order Receipt History** in the Purchase Order Parameters (tdpur0100m400) session.
- **Purchase schedules**
  Log Schedule History and **Log Actual Schedule Receipt History** in the Purchase Contract Parameters (tdpur0100m300) session.

Contents of history files

The purchase order/schedule history files include:

- All created purchase order/schedule (line)s. These order/schedule (line)s are the not yet processed order/schedule (line)s.
- All invoiced purchase order/schedule (line)s. These order/schedule (line)s are the processed order/schedule (line)s.

The history files are of these record types:

- **Intake**
  The order/schedule line was added, changed, or deleted.
- **Cancellation**
  The order/schedule line was canceled.
- **Turnover**
  The order line was processed in the Process Delivered Purchase Orders (tdpur4223m000) session, or the schedule line was processed in the Process Delivered Purchase Schedules (tdpur3223m000) session.

The fields in this table determine if, when, and how the purchase order/schedule history files are updated:

Purchase orders	
Field	**Retrieved from session**

Log Order History	Purchase Orders (tdpur4100m000)
Start Logging History at	Purchase Orders (tdpur4100m000)
Level of Intake Logging	Purchase Order Parameters (tdpur0100m400)
Log Actual Order Receipt History	Purchase Order Parameters (tdpur0100m400)

Purchase schedules

Field	Retrieved from session
Log Schedule History	Purchase Schedules (tdpur3110m000)
Level of Intake Logging	Purchase Contract Parameters (tdpur0100m300)
Log Actual Schedule Receipt History	Purchase Contract Parameters (tdpur0100m300)

For purchase schedules, history logging always starts during approval.

Deleting history files

You can restrict the total amount of history data with the Archive/Delete Purchase Order/Schedule History (tdpur5201m000) session.

Be aware that the history files are the base for statistics. Before you delete the history files, verify that the statistics are fully updated. If the history files are deleted before the update, you cannot fully update the statistics

Note

You cannot modify the history data. It is only used for information purposes.

Chapter 2
Sales schedules

2

General and master data

Overview of sales schedule handling

Sales schedules are used to support long-term sales projects with frequent deliveries. They represent schedules for specific goods that are used between trade partners.

Because sales schedules provide a more detailed way to specify delivery dates and times for items, use sales schedules instead of standard sales orders when you require full visibility and time phasing of material requirement information, for example, in a just-in-time (JIT) environment.

Sales schedules can be referenced or nonreferenced.

After approval, a sales schedule is a legal obligation to deliver items according to the agreed terms and conditions, including specific prices and discounts.

Sales schedule master data

Before you can complete the sales schedule procedure, you must specify the sales schedule master data.

For more information, refer to:

- Sales item data
- Sales organizational data

You must also specify:

- The parameters on the **Schedules** tab of the Sales Contract Parameters (tdsls0100s300) session.
- A number group for sales schedules in the **Number Group Sales Orders / Sales Schedules** field of the Sales Order Parameters (tdsls0100s400) session.
- Logistic agreements in the Sales Contract Line Logistic Data (tdsls3102m000) session, if the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session.

- Logistic agreements in the Items - Sales Business Partner (tdisa0510m000) session, if the **Use Contracts for Schedules** check box is cleared in the Sales Contract Parameters (tdsls0100s300) session.
- The **Automaticallly Process Sales Schedule Releases** check box in the Sold-to Business Partner (tccom4110s000) session.

Note

If the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session, a sales schedule can only be created if it is linked to an active sales contract. In addition, if the **Use Terms and Conditions for Schedules** check box is also selected in the Sales Contract Parameters (tdsls0100s300) session, it is also mandatory for the sales schedule to have a linked terms and conditions agreement.

For more information, refer to:

- Sales contracts - overview
- Overview of terms and conditions
- *Automatic sales schedule processing (p. 71)*

Sales schedule procedure

The sales schedule procedure consists of the following processes:

1. To create and update sales releases
2. To create and update sales schedules
3. To determine and use sales schedule authorizations
4. To determine and use sales schedule cumulatives
5. To approve sales schedules
6. To release sales schedules or planned warehouse orders to Warehousing
7. To release sales schedules or planned warehouse orders to Invoicing
8. To process sales schedules

For more information, refer to *Sales schedule procedure (p. 97)*.

Note

A simplified sales schedule solution to generate sales orders in time is the creation of non-referenced sales schedules from contract deliveries. For more information, refer to Scheduled requirements for a sales contract.

Additional processes

The following are optional for sales schedules:

- **Material prices**
  If the **Material Pricing in Sales** check box is selected in the Material Price Parameters (tcmpr0100m000) session, after setting up the material pricing master data, LN can retrieve material price information for a schedule line.
- **Additional information fields**
  You can define additional information fields. Their content is transferred from the sales schedule via the warehouse order to the shipment in Warehousing. For more information, refer to *Additional information fields (p. 73)*.
- **Consumptions**
  You can register and process consumptions for sales schedules. For more information, refer to *Inventory consumption handling (p. 75)*.
- **Additional costs**
  You can calculate additional costs for sales shipments to which sales schedule lines are linked. For more information, refer to *Additional costs - shipment based (p. 82)*.
- **Planned warehouse orders**
  You can use planned warehouse orders in the sales schedule procedure. For more information, refer to *Planned warehouse orders (p. 85)*.

Automatic sales schedule processing

You can automate the processing of sales schedules. For each activity, you specify whether the activity is run automatically or manually.

The execution of the schedule procedure activities starts when a sales release is processed into a sales schedule or a sales schedule is created. All automatic activities are executed successively until an activity is defined as non-automatic. After you manually executed the non-automatic activity, LN executes the next automatic activity, and so on. Therefore, for each activity, you specify whether the activity is run automatically or manually.

Note

For referenced and non-referenced schedules, the **Automaticallly Process Sales Schedule Releases** check box in the Sold-to Business Partner (tccom4110s000) session determines whether or not sales releases are automatically converted to sales schedules with the **Created** status.

The **Use Contracts for Schedules** and **Use Terms and Conditions for Schedules** check boxes in the Sales Contract Parameters (tdsls0100s300) session determine the session from which LN retrieves the automatic processing data.

- **Use Contracts for Schedules is cleared**
  Data is retrieved from the Items - Sales Business Partner (tdisa0510m000) session.

- **Use Contracts for Schedules is selected and Use Terms and Conditions for Schedules is cleared**
  If the sales schedule is based on a sales contract with a linked terms and conditions agreement, automatic processing data is retrieved from the Schedule Terms and Conditions (tctrm1131m000) session. If no terms and conditions agreement is linked to the contract, data is retrieved from the Sales Contract Line Logistic Data (tdsls3102m000) session.
- **Use Contracts for Schedules and Use Terms and Conditions for Schedules are selected**
  The sales schedule must be based on a sales contract with a linked terms and conditions agreement. Therefore, automatic processing data is retrieved from the Schedule Terms and Conditions (tctrm1131m000) session.

Search logic for the retrieval of automatic sales schedule processing data

Use Contracts for Schedules	Linked terms and conditions agreement?	Automatic processing data retrieved from session:	Automatic processing data
Selected	Yes	Schedule Terms and Conditions (tctrm1131m000)	**Non-referenced schedules** 1. **Automatically Adjust Sales Schedules** 2. **Automatically Approve Non-referenced Sales Schedules** 3. **Automatically Release Non-referenced Sales Schedules to Order** and **Automatically Release Backorders for Non-Referenced Schedules** **Referenced schedules** 1. **Automatically Approve Referenced Sales Schedules** 2. **Automatically Release Referenced Sales Schedules to Order** and **Automatically Release Backorders for Referenced Schedules**
Selected	No	Sales Contract Line Logistic Data (tdsls3102m000)	**Approve Referenced Sales Schedules automatically**
Cleared	Not applicable	Items - Sales Business Partner (tdisa0510m000)	**Approve Referenced Sales Schedules automatically**

Note

- For automatically executed activities, no process reports are printed.
- If errors occur when executing a sales schedule activity through a batch session, you can select a device to print the errors.

Additional information fields

Additional information fields

You can define additional information fields that can be linked to LN tables. The contents of these additional fields can be transferred between LN tables, which allows users to enter additional information at sales schedules.The additional information is passed via the warehouse order to a shipment in warehousing. Additional information fields are meaningless to LN as no functional logic is linked to the contents of these fields.

To define additional information fields

To use additional information fields, you must first define the desired additional fields using the Additional Information Definitions (tcstl2100m000) session. You can link a maximum of 26 alphanumeric string fields, with a length of 30 characters per field, to a table. After specifying the Additional Information Definitions, additional information fields are ready for use. In the user interface the additional information fields are added to the standard LN fields. When you, for example, link additional information fields to the Warehousing Orders (whinh200) table, the additional information fields are visible and can be edited in the corresponding Warehousing Orders (whinh2100m000) session. Additional information can only be created or updated by the sessions of the parent objects. The additional information fields are displayed in a separate tab of the session. You can link additional information fields to a table as per the business needs. The linked fields become effective after the fields are set to active in the Additional Information Definitions (tcstl2100m000) session. Additional information fields can also be deactivated at any time.

Note

A limited set of LN tables is prepared for linking additional information fields. For more information, refer to Related topics.

Example

LN can transfer additional information fields between tables, for example, from a sales schedule to a warehouse order. Transfer will only take place when additional fields have the same field name in the Additional Information Definitions (tcstl2100m000) session. For example, an additional field with the field name *Point of Usage* is linked to the sales schedule table, and you want to transfer the value of the *Point of Usage* field from a sales schedule to the warehouse order, then the same field name called, *Point of Usage*, must be used in the additional information definition of the warehouse order.

Note

The transfer of additional fields is application logic which is hard coded in LN. LN offers a limited set of *transfer points*. For more information, refer to Related topics.

Additional information fields - Sales

The table below provides an overview of the tables in Sales to which you can link additional information fields. The table also contains the corresponding sessions which display the additional information fields.

Table	Session
tdsls308	Sales Release Lines (tdsls3508m000)
tdsls315	Sales Release Line Details (tdsls3515m000)
tdsls316	■ Sales Release Lines - Sequence Shipping Schedule (tdsls3116m000) ■ Sales Release Line Details - Pick-up Sheet (tdsls3116m100)
tdsls311	Sales Schedules (tdsls3111m000)
tdsls307	Sales Schedule Lines (tdsls3107m000)
tdsls320	Sales Schedule Planned Warehouse Orders (tdsls3520m000)
tdsls450	Sales Schedule History (tdsls3560m000)
tdsls451	Sales Schedule Line History (tdsls3561m000)

Note

- Usually, additional information is retrieved from a Business Object Document (BOD). However, as long as it is allowed to update a sales release or sales schedule, you can also edit the additional information fields on a sales release or sales schedule.
- Additional information can only be available in the Sales Schedule Planned Warehouse Orders (tdsls320) table if the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session.

Additional information can be transferred from one table to another table.

The following flows of additional information are supported in Sales:

- Material release / Shipping schedule
- Sequence shipping schedule
- Pick-up sheets

Material release/ Shipping schedule

The additional information is transferred as follows:

- **Header flow**
  Sales Release Lines (tdsls3508m000)-> Sales Schedules (tdsls3111m000)-> Warehousing Orders (whinh2100m000).
- **Line flow**
  Sales Release Line Details (tdsls3515m000)-> Sales Schedule Lines (tdsls3107m000)-> Sales Schedule Planned Warehouse Orders (tdsls3520m000)-> Outbound Order Lines (whinh2120m000).

Sequence shipping schedule

The additional information is transferred as follows:

- **Header flow**
  Sales Release Lines - Sequence Shipping Schedule (tdsls3116m000)-> Sales Schedules (tdsls3111m000)-> Warehousing Orders (whinh2100m000).
- **Line flow**
  Sales Release Lines - Sequence Shipping Schedule (tdsls3116m000)-> Sales Schedule Lines (tdsls3107m000)-> Sales Schedule Planned Warehouse Orders (tdsls3520m000)-> Outbound Order Lines (whinh2120m000).

Pick-up sheet

The additional information is transferred as follows:

- **Header flow**
  Sales Release Line Details - Pick-up Sheet (tdsls3116m100)-> Sales Schedules (tdsls3111m000)-> Warehousing Orders (whinh2100m000).
- **Line flow**
  Sales Release Line Details - Pick-up Sheet (tdsls3116m100)-> Sales Schedule Lines (tdsls3107m000)-> Sales Schedule Planned Warehouse Orders (tdsls3520m000)-> Outbound Order Lines (whinh2120m000).

Inventory consumption handling

In vendor managed inventory (VMI) and subcontracting environments, consumptions are recorded to view and maintain consumption data in the supplier's or manufacturer's administrative warehouse. This warehouse mirrors the customer's or subcontractor's warehouse from which the customer/subcontractor consumes materials supplied by the supplier/manufacturer.

Handling inventory consumptions includes the creation and processing of these consumptions.

Note

In this topic, supplier refers to the supplier or the manufacturer, customer refers to the customer or the subcontractor, and VMI warehouse refers to the customer's or the subcontractor's warehouse from which the customer or the subcontractor consumes goods supplied by the supplier or manufacturer.

Consumption master data

To record inventory consumptions in the supplier's administrative warehouse, to update the inventory levels, and initiate invoicing:

1. In the Implemented Software Components (tccom0100s000) session, select:
   - The **VMI (supplier side)** check box to maintain consumptions in VMI environments.
   - The **Subcontracting with Material Flow** and **Service Subcontracting with Material Flow** check boxes to maintain consumptions in subcontracting environments.
2. In the Terms and Conditions (tctrm1100m000) session, specify terms and conditions for the relevant business partners, warehouses, and items.
3. In the Schedule Terms and Conditions (tctrm1131m000) session, select the **External Packing Slip is Mandatory** check box if the consumption line must include an external packing slip for a schedule. If the **Duplicate External Packing Slip Allowed** check box is selected for a combination of sold-to business partner, ship-to business partner, and item, an external packing slip can be used that is already used.
4. To create consumptions for subcontracting scenarios in the Inventory Consumptions (tdsls4140m000) session, you can set the values in the **Method of Inventory Update** field of the Logistics Terms and Conditions (tctrm1140m000) session to:
   - **Receipts and Consumptions**
   - **Receipts, Consumptions and Inv. Balance**
   - **Inventory Balance as Consumption**

   If, for VMI scenarios, you do not specify this optional field, received quantities are not displayed in the Inventory Consumptions (tdsls4140m000) session; material consumptions are updated through backflushing.

For further information on how to set up the VMI functionality, see VMI customer forecast - setup and VMI supplier forecast - setup. For information on subcontracting, see Overview of subcontracting.

Consumptions

Consumption records are generated or manually created. They show the received quantities provided by the supplier and the subsequent consumptions by the customer.

A consumption record includes a header and one or more lines.

- **Consumption header**
  When the VMI warehouse is replenished, LN generates a consumption header. Headers of consumption records contain the name of the customer, the VMI warehouse, and the aggregated received and consumed item quantities. You can view and maintain these headers in the Inventory Consumptions (tdsls4140m000) session.

- **Consumption line(s)**
  When the customer consumes material, a consumption line is created. You can view and maintain details of individual consumptions in the Inventory Consumption Lines (tdsls4141m000) session.
- Consumption lines are generated after receiving the LoadInventoryConsumption Business Object Document (BOD), or you can manually create them based on an e-mail or phone call from the customer.

After the consumption is specified, it must be processed to:

- Invoice the customer for the consumed quantities, if invoicing is applicable.
- Decrease the inventory levels of the administrative warehouse.

Note

In the customer's LN system, consumptions are generated in the Consigned Consumptions (whwmd2551m000) and Inventory Consumptions (whina1514m000) sessions. For more information, refer to Consumption records.

Processing consumptions

To determine whether invoicing is applicable, to start up invoicing for the relevant customer, and to lower the inventory levels in the administrative warehouse, you must process the inventory consumptions.

You can process:

- Consumption lines, by selecting **Process Consumption Line** from the appropriate menu in the Inventory Consumption Lines (tdsls4141m000) session.
- Consumption lines of an item, by selecting **Process Inventory Consumptions** from the appropriate menu in the Inventory Consumptions (tdsls4140m000) session.
- A range of consumptions in the Process Inventory Consumptions (tdsls4290m000) session.

After the consumptions are processed, the orders and schedules that are linked to the consumptions are displayed in the Orders by Inventory Consumption Line (tdsls4142m000) session.

Note

You can start all of these sessions from the Inventory Consumption (tdsls4640m000) session.

How LN processes consumptions - outline

Step 1: Link consumption record to replenishment order/schedule

To determine whether invoicing is applicable and to start up invoicing for the relevant customer, LN links the consumption to the order/schedule with which the item was received in the VMI warehouse as follows:

1. If a **Subcontracting Reference** is available on the consumption line, the consumption is linked to the corresponding purchase material supply line in the Purchase Order Material Supply Lines (tdpur4116m000) session.

2. If a **Reference**, **Shipment Reference**, or both fields are specified, LN searches for a matching sales schedule for a combination of these fields and links the consumption to the schedule. If no schedule can be found, a message is displayed.
3. If a **Packing Slip** is available, LN searches for a matching sales schedule shipment and links the consumption to the schedule. If no schedule shipment can be found, a message is displayed.
4. If a **Customer Reference** is available and a matching sales order is found, the consumption is linked to the order using the order's payment conditions.
5. If no matching sales order can be found, LN checks whether the **Customer Reference** has a matching sales schedule (line) that can be linked to the consumption.
6. If the **Invoicing Required** check box is selected, LN searches for a **Pay on Use** sales order line to which the consumption can be linked.
7. If no **Pay on Use** sales order line can be found, LN searches for a **Pay on Use** sales schedule line to which the consumption can be linked.
8. If no **Pay on Use** sales schedule line can be found, a consignment invoicing sales order is created to settle the invoicing of the consumed quantity.

If the **Invoicing Required** check box is cleared on the consumption line, LN automatically lowers the inventory level. For more information, refer to Adjusting inventory level in the administrative warehouse.

Step 2: Process returns

If the **Return** check box is selected on the consumption line, no invoicing is required.

If the sales order found is **Pay on Use**, an invoicing line is created that is not invoiced. On the invoicing line, the returned consumption quantity is displayed in the **Returned Consumption Quantity** field of the Sales Order Invoice Lines (tdsls4106m100) session.

If the **Subcontracting Reference** is filled or the returned item is a packaging item, the consumption line's **Processed** check box is selected, and no further action is taken.

To return quantities, you must manually create a sales return order and link it to the relevant order/schedule. For more information, refer to Sales return orders.

Linking consumptions to the replenishment order

The following can apply to a consumption record:

- It is linked to the replenishment subcontracting order. For more information, refer to Subcontracting order.
- It is linked to the replenishment VMI order/schedule. For more information, refer to VMI order/schedule.
- It cannot be linked to a replenishment order/schedule. For more information, refer to Sales consignment invoicing orders with origin **Consumption**.

Subcontracting order

To link a consumption line to a subcontracting purchase order, LN first utilizes the subcontracting reference, and then the consumed item to locate the relevant material supply line matching the subcontracting purchase order. The material line with an item that matches the inventory consumption line's item is selected.

For costing purposes, the used material must be booked on the correct subcontracting purchase order. Therefore, the **Subcontracting Reference** field in the Inventory Consumption Lines (tdsls4141m000) session is mandatory.

Usually, the subcontractor is not invoiced for material that is supplied by the manufacturer and consumed by the subcontractor to produce the items for the manufacturer.

For consumption lines that are linked to an operation subcontracting, item subcontracting, or service subcontracting material supply line, the **Consumed Quantity** field is updated in the Purchase Order Material Supply Lines (tdpur4116m000) session, after receipt of a consumption message from the subcontractor. Consequently, the inventory levels are updated. For more information, refer to Adjusting inventory level in the administrative warehouse

For more information, refer to Subcontracting in Procurement.

VMI order/schedule

To link a consumption line to a vendor managed inventory (VMI) order or schedule, LN first uses the combination of reference and shipment reference to search for a matching sales schedule. Next, the packing slip is used to search for a matching sales schedule shipment. Finally, the customer order/schedule reference is included in the search.

In VMI environments, the customer order/schedule reference is not mandatory. If an inventory consumption line contains a customer order/schedule reference, LN searches for a sales order or sales schedule with a matching **Customer Order**. If no match is found, LN searches for the first sales schedule line with a matching **Customer Schedule Number**. Consumption lines are linked to this specific sales schedule, although consecutive schedule lines can have a different customer schedule reference.

If the payment found is **Pay on Use**, inventory levels are updated and invoicing is triggered. For the order/schedule lines linked to the consumption line, LN creates invoicing lines in the Sales Order Invoice Lines (tdsls4106m100) session or Sales Schedule Invoice Lines (tdsls3140m200) session.

If the payment found is **Pay on Receipt** or **No Payment**, only the inventory levels are updated. For more information, refer to Adjusting inventory level in the administrative warehouse.

If no packing slip or customer order/schedule reference is available and the **Invoicing Required** check box is selected:

1. LN searches for the oldest sales order/schedule with payment type **Pay on Use** that is not yet fully consumed. If a matching sales order/schedule line is found, LN creates an invoice line linked to that sales order line or sales schedule.
2. If no matching line is found, LN creates a consignment invoicing sales order based on the **Consignment Invoicing Order Type** field in the Sales Order Parameters (tdsls0100s400) session.

If a **Pay on Use** sales order/schedule line is used and the total consumed quantity exceeds the ordered quantity, LN creates an invoicing line for the part that "fits". For the remainder, LN searches for other **Pay on Use** sales order/schedule lines to create invoicing lines. For the consumed quantities for which no sales order/schedule line is found, LN creates a consignment invoicing sales order.

For each invoice line created, LN updates the inventory levels with the invoiced quantities. For more information, refer to Adjusting inventory level in the administrative warehouse.

Note

LN searches for **Pay on Use** sales order/schedule lines only if the **Ownership External** check box is selected in the Implemented Software Components (tccom0100s000) session.

Sales consignment invoicing orders with origin Consumption

If a consumption cannot be linked to a replenishment order, a sales consignment invoicing order is generated to settle the invoicing of the consumed quantity. For these orders, their origin is **Consumption** and their order type is retrieved from the **Consignment Invoicing Order Type** field in the Sales Order Parameters (tdsls0100s400) session.

Updating inventory levels for these orders is handled by Warehousing, because warehouse activities are part of the order procedure of a sales consignment invoicing order.

After a consignment invoicing order is released to Warehousing, inventory level adjustments are handled by the outbound process. You should set the activities of the warehousing order type that are linked to the consignment invoicing order type to automatic. For more information, refer to To define warehousing procedures.

Note

- The price for sales consignment invoicing orders is based on the consumption date.
- You cannot cancel or delete sales orders for which the origin is **Consumption**, nor cancel, delete, or add corresponding lines or change the item and quantity.

Adjusting inventory level in the administrative warehouse

LN automatically updates the inventory levels of the administrative warehouse without performing the outbound and shipment procedures. To register the inventory reduction, a sales order of type **Sales (Manual)** and a shipment are created.

You can view this sales order and shipment in the Item - Warehouse - Inventory Transactions (whinr1510m000) and Inventory Consumptions (whina1514m000) sessions. The ownership of the sales order is **Customer Owned**, because invoicing and payment is performed based on the originating **Pay on Use** sales order/schedule, the consignment invoicing order, or the subcontracting purchase order.

Prices and discounts

When LN creates an invoicing line:

- **Sales order**
  LN determines prices and discounts based on the values of the originating sales order line, using the consumption or replenishment date, which depends on the **Price Determination Based on** parameter setting in the Order Terms and Conditions (tctrm1130m000) session.
- **Sales schedule**
  LN determines prices and discounts based on the values of the first schedule line linked to the originating sales schedule.

Note

- In the Sales Order Invoice Lines (tdsls4106m100) session, consumption invoice lines are linked to a sales order line. In the Sales Schedule Invoice Lines (tdsls3140m200) session, consumption invoice lines are linked to a sales schedule header. When you release consumption invoice lines to Invoicing, required information, such as prices and tax, are retrieved from the first schedule line linked to the sales schedule. Information from successive schedule lines is not taken into account.
- The price for sales consignment invoicing orders is based on the consumption date.

Pay on Use sales order/schedule lines

Sales order/schedule lines for which the payment type is **Pay on Use** and the activity **Release to Invoicing** is part of the order procedure, can:

- Register consumptions.
- Be invoiced, that is, invoicing lines are created for the consumption lines to which they are linked.
- Have the **Self Billing** check box selected.

Note

This is applicable in an extended consignment setup, in which you directly link the invoicing for a consumption of consignment inventory to the replenishment order or schedule.

In a basic consignment setup, in which the order and schedule procedures are split into a replenishment and invoicing part, these rules apply:

- Invoicing is not available for consignment replenishment orders, which are sales orders for which the **Consignment Replenishment** check box is selected in the Sales Order Types (tdsls0594m000) session.
- Because for consignment replenishment orders **Release to Invoicing** is not part of the order procedure, consumptions can be invoiced using a **Consignment Invoicing** sales order. These are sales orders for which the **Consignment Invoicing** check box is selected in the Sales Order Types (tdsls0594m000) session.

For more information, refer to Consignment in Sales and Procurement.

Additional costs for sales schedules

Additional costs - overview

You can specify additional costs that can be placed on a sales order or shipment to charge extra costs for an order or shipment.

Additional costs- set up

Before additional costs can be linked to sales orders and schedules, you must define the master data.

For more information, refer to:

- Additional costs – setup

Additional costs - types

Additional costs can be order based or shipment based.

- **Order based**
  Additional costs are calculated for a sales order or sales order line. After sales order approval, additional costs are placed on an order as extra cost (items) after the last item recorded.
- **Shipment based**
  Additional costs are calculated for a sales shipment or shipment line. After confirmation of a shipment, a sales shipment cost order is generated containing all additional costs for one shipment (line).

Note

Order-based additional costs are only applicable for sales orders and not for sales schedules.

For more information, refer to:

- Additional costs - order based
- *Additional costs - shipment based (p. 82)*

Additional costs - shipment based

Shipment based additional costs are calculated for sales shipments or shipment lines. After confirmation of a shipment (line), a sales cost order is generated based on the shipment (line). A sales cost order with the **Shipment** origin includes all additional costs for one shipment (line).

Note

- Multiple sales order lines and sales schedule lines can be linked to one shipment.
- The sales shipment cost order and the order/schedule lines that are linked to a shipment, receive a common shipment ID. Based on this ID, a complete shipment can be invoiced to the customer. The relevant order/schedule lines and the sales shipment cost order can be released to invoicing together.

Shipment based additional costs - procedure

These steps are completed in the shipment based additional costs procedure:

Step 1: Generating a sales shipment cost order

If an additional cost set with valid additional cost lines is found for a shipment (line), the shipment-dependent and item-dependent additional costs are added to the shipments as separate shipment lines in the Shipment Lines (whinh4131m000) session. The additional shipment cost lines are generated in Warehousing. When the shipment is confirmed, a sales order with the **Shipment** origin is generated in the Sales Orders (tdsls4100m000) session.

The following apply to these sales orders:

- The sales order type and order series are retrieved from the **Shipment Cost Order Type** and **Shipment Cost Order Series** fields in the Sales Order Parameters (tdsls0100s400) session.
- The **Shipment** field is automatically filled for these orders in the Sales Orders (tdsls4100m000) session.
- Only cost and service items can appear on this sales order.
- The **Additional Cost Line** check box is selected for the generated sales order lines.
- The additional cost amount is displayed in the **Amount** field and the **Price** field is empty on the sales order line. The **Amount** can be changed until the activity Sales Deliveries (tdsls4101m200) is executed. After this, the delivered amount can be changed in the Change Prices and Discounts after Delivery (tdsls4122m000) or Change Prices and Discounts of Sales Invoice Lines (tdsls4132m000) sessions.

Step 2: Approving the sales shipment cost order

The **Automatic Approve Shipment based Cost Orders** check box in the Sales Order Parameters (tdsls0100s400) session determines how the sales shipment cost order must be approved.

Step 3: Issuing the additional cost line items

Based on the value of the **Release to Warehouse** check box in the Items - Sales (tdisa0501m000) session, issuing the cost item is carried out in Warehousing or in Sales.

Therefore, either the Release Sales Orders to Warehousing (tdsls4246m000) or the Sales Deliveries (tdsls4101m200) activity must be executed for the sales order line.

If Sales Deliveries (tdsls4101m200) is not executed before Release Sales Orders/Schedules to Invoicing (tdsls4247m000), the activity is set to **Executed** during execution of the Release Sales Orders/Schedules to Invoicing (tdsls4247m000) session. Therefore, it is not mandatory to execute Sales Deliveries (tdsls4101m200).

Step 4: Releasing the sales shipment cost order to Invoicing

The sales shipment cost order and the order/schedule lines that are linked to a shipment have a common shipment ID. Based on this ID, you can invoice a complete shipment to the customer. If you select the **Shipment** check box in the Release Sales Orders/Schedules to Invoicing (tdsls4247m000) session, the

sales shipment cost order and the order/schedule lines that are linked to the shipment, are released to Invoicing together.

The **Release Additional Cost Lines automatically to Invoicing upon** field in the Sales Order Parameters (tdsls0100s400) session determines how the sales shipment cost order must be released to Invoicing.

You can view the shipment IDs in these sessions:

- **Sales shipment cost order**
  Sales Orders (tdsls4100m000)
- **Sales shipment cost order lines**
  Linked Order Line Data (tdsls4102s200)
- **Sales order lines**
  Sales Order Actual Delivery Lines (tdsls4106m000)
- **Sales schedule lines**
  Sales Schedule Actual Delivery Lines (tdsls3140m000)

Step 5: Processing the additional cost lines

Process the sales orders and sales schedules together with the additional cost lines in the Process Delivered Sales Orders (tdsls4223m000) and Process Delivered Sales Schedules (tdsls3223m000) sessions.

Additional cost calculation for shipments/shipment lines

The calculation of additional costs for shipments/shipment lines is based on the value of the **Method of Additional Cost Calculation** field in the Sold-to Business Partner (tccom4110s000) session. For the shipments, the **Method of Additional Cost Calculation** must be **Header Based**; for the shipment lines, it must be **Line Based**.

The additional costs are calculated for sales orders and sales schedules if the **Calculate Additional Costs for Shipments** check box is selected in the Inventory Handling Parameters (whinh0100m000) session.

- **Sales orders**
  The additional costs are calculated with the cost set of the business partner (and/or item).
- If the **Method of Additional Cost Calculation** is **Header Based** in the Sold-to Business Partner (tccom4110s000) session, the additional cost lines are based on totals per shipment and the link to the originating shipment line is not saved.
- If the **Method of Additional Cost Calculation** is **Line Based**, the additional costs are calculated for every originating order line and the link to the originating shipment line is saved.
- **Sales schedules**
  The **Header Based** additional costs are calculated with the cost set of the business partner (and/or item). The additional cost lines are based on the totals per shipment and the link to the originating shipment is not saved.
- The **Line Based** additional costs are calculated for the cost set of the contract. This calculation is always independent of the **Method of Additional Cost Calculation**. The generated additional

cost lines are linked to the originating order line. The quantities of all the shipment lines can be added before the costs are calculated. This is applicable for serials in inventory that have multiple shipment lines per order line.

Confirm shipment

For confirmed shipment lines, the additional costs are recalculated if the status of the additional cost line is **Not Calculated**. If the status is **Modified**, LN checks if you want to recalculate additional costs or skip the recalculation. After the additional costs are recalculated, the **Additional Costs** field in the Shipments (whinh4130m000) session is set to **Calculated**.

Compose shipment

The related additional cost lines must be processed for the selected options in the Compose Shipment (whinh4231m000) session.

If, on the appropriate menu, you click:

- **Split Line**, the status of the originating shipment line is reset to **Modified** and the additional cost lines are removed. While confirming the originating line, the additional costs are recalculated.
- **Move to Shipment**, the additional costs of the originating shipment line are moved to the new shipment line.

Print packing slips and delivery notes

In the Print Packing Slips (whinh4475m000) and Print Delivery Notes (whinh4477m000) sessions, the header based additional costs are printed as first lines. The line based additional costs are printed below the linked shipment line.

Sales schedule planned warehouse orders

Planned warehouse orders

You can use planned warehouse orders to decouple schedule updates and revisions from warehouse orders and to consolidate sales schedule lines by quantity and by date.

Note

- To use planned warehouse orders, you must select the **Use Contracts for Schedules** check box in the Sales Contract Parameters (tdsls0100s300) session. Planned warehouse orders are created during sales schedule approval.
- If you are allowed to ship only full packaging material for sales schedule lines, in the Sales Contract Line Logistic Data (tdsls3102m000) session, a package definition is specified for which the **Full Packages Only** check box is selected in the Handling Unit Templates (whwmd4160m000) session. In this case, the ordered quantity on a planned warehouse order often is not the sum of the linked sales schedule line(s), but is adjusted to comply with the quantity specified in the package definition.

- A many-to-many relationship can exist between warehouse orders (outbound lines) in Warehousing and schedule lines in Sales.

Creating planned warehouse orders

When a sales schedule line with the **Firm** or **Immediate** requirement type is approved, LN completes the following steps:

1. Creates a planned warehouse order with the same number as the sales schedule in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session. For referenced schedules, a reference distribution is created below the planned warehouse order line in the Planned Warehouse Order Reference Distribution (tdsls3522m000) session.
2. Creates a link between the planned warehouse order and the sales schedule line (revision) in the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.
3. Checks whether the sales schedule line can be consolidated by quantity. In this case, multiple schedule lines are combined into one planned warehouse order. The planned warehouse order's ordered quantity is a grouped quantity and the same planned warehouse order is linked to various schedule lines. For more information, refer to *Consolidating schedule lines on planned warehouse orders (p. 87)*.
4. Checks whether the sales schedule line can be consolidated by date. In this case, the planned warehouse order's **Requirement Start Date** or **Planned Receipt Date** is changed into a pre-defined delivery moment, which reduces deliveries. You can also manually specify options for consolidating sales schedule lines on planned warehouse orders during and after sales schedule approval. For more information, refer to *Consolidating schedule lines on planned warehouse orders (p. 87)*.

Note

For sales schedule lines with the following characteristics, no planned warehouse orders can be created:

- The sales schedule line is linked to a material release that does not contain the actual order. For such schedule lines, the **Use Material Release for Firm Requirements** check box is cleared in the Sales Contract Line Logistic Data (tdsls3102m000) session.
- The **Customer Requirement Type** and **Requirement Type** fields have different values in the Sales Schedule Lines (tdsls3107m000) session.

Handling planned warehouse orders

After creation, the following steps are carried out for a planned warehouse order:

Step 1: Release the planned warehouse order to Warehousing

Releasing the planned order to a real warehouse order is executed as follows:

- Automatically, if the **Automatically Release Non-referenced Sales Schedules to Order** or **Automatically Release Referenced Sales Schedules to Order** check boxes are selected in the Schedule Terms and Conditions (tctrm1131m000) session.

- Manually, in the Release Sales Schedules to Order (tdsls3207m000) and Release Pick-up Sheets to Warehousing (tdsls3207m100) sessions.

Step 2: Execute deliveries for the planned warehouse order

For more information, refer to *Delivering planned warehouse orders (p. 94)*.

Step 3: Release the planned warehouse order to Invoicing

Releasing to Invoicing is executed as follows:

- By actual delivery/invoice line for the planned warehouse order in the Sales Schedule Invoice Lines (tdsls3140m200) session.
- For a range of planned warehouse orders in the Release Sales Orders/Schedules to Invoicing (tdsls4247m000) session.

Step 4: Process the planned warehouse order

If, in the Process Delivered Sales Schedules (tdsls3223m000) session, the sales schedules linked to the **Invoiced** planned warehouse order are processed, the planned warehouse order is also processed.

During processing, the turnover history is logged, the contract is updated, and the schedule line status is updated.

Note

You can use the Sales Schedule (tdsls3611m000) session to execute all of these steps.

Updating planned warehouse orders

When new sales releases are processed, sales schedule line updates or new schedule line revisions can lead to updates on the planned warehouse order and planned warehouse order links. How LN handles the schedule line updates or the new schedule line revisions depends on the status of the planned warehouse order and, if applicable, the status of the warehouse order.

For more information, refer to *Updating planned warehouse orders (p. 91)*.

Consolidating schedule lines on planned warehouse orders

If planned warehouse orders are used, you can consolidate sales schedule lines by quantity and/or by date.

Consolidation by quantity means that multiple schedule lines are combined into one planned warehouse order. The planned warehouse order's ordered quantity is a grouped quantity and the same planned warehouse order is linked to various schedule lines.

Consolidation by date means that shipments for scheduled items are consolidated into pre-defined delivery moments on planned warehouse orders.

Master data

In the Sales Contract Line Logistic Data (tdsls3102m000) session, these consolidation fields must be specified:

- **Delivery Pattern**
  If this field is specified, LN automatically consolidates sales schedule lines by quantity and/or by date.
- **Allow Consolidation of References**
  Determines whether or not referenced schedule lines can be consolidated by quantity for the same **Shipment Reference**.
- **Ignore Additional Information during Consolidation**
  Determines whether or not schedule lines with different contents in their additional information fields can be consolidated.

Consolidating requirements by quantity

Consolidation by quantity enables you to combine multiple schedule lines of a specific sales schedule into one planned warehouse order.

In the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session, schedule lines are combined in the same planned warehouse order if the sales schedule line fields are the same, except for these fields, which can differ:

- Dates
- Quantities
- **Reference**
- **Customer Schedule Number**
- **Packaging Reference A**
- **Packaging Reference B**
- **Additional Field**, provided the **Ignore Additional Information during Consolidation** check box is selected

If schedule lines differ in, for example, price information or sales unit, they cannot be consolidated. In this case, multiple planned warehouse orders can be created for the same shipment reference.

Note

Referenced schedule lines can be consolidated into one planned warehouse order only if they have the same shipment reference.

If the **Schedule Line Text** check box is selected for a sales schedule line, this schedule line can never be consolidated by quantity.

These are applicable for consolidation by quantity:

- Information from the first schedule line linked to the planned warehouse order is taken as the basis for consolidation. This means that information from other schedule lines can be lost.
- If consolidation results change over time because of new information on incoming schedule revisions, unexpected underdelivery or overdelivery situations can arise with unexpected planned warehouse order creation.

Example

For schedule SCH0001, the first revision contains the following data:

Schedule line	Ordered Quantity	Delivery Point
10	15	001
20	35	001

Schedule lines 10 and 20 are consolidated into one planned warehouse order (SCH0001) with an ordered quantity of 50.

The second schedule revision contains the following data:

Schedule line	Ordered Quantity	Delivery Point
10	17	001
20	37	002

Because of the changed delivery point, these schedule lines can no longer be consolidated by quantity into one planned warehouse order.

Dependent on the (planned) warehouse order's status, the following are applicable:

- **Update allowed**
  The quantity of the existing planned warehouse order for delivery point 001 is reduced and set to 17.
- The quantity of the first planned warehouse order link is reduced and its revision is updated and the second planned warehouse order link is deleted.
- A second planned warehouse order and a link is created for the second schedule line.
- **Update not allowed**
  The first planned warehouse order for delivery point 001 is processed in Warehousing.
- The quantity of the first new schedule line for delivery point 001 is ignored; only the revision on the planned warehouse order link is updated.
- For the second schedule line, a new planned warehouse order and planned warehouse order link are created. The end result is an overdelivery.

Note

LN always gives a warning message if new schedule revisions or updates lead to unexpected (over)deliveries. This enables you to manually intervene in the shipment process, if desired.

Consolidating requirements by date

Consolidation by date enables you to change the delivery moments for scheduled items into fixed delivery moments on planned warehouse orders.

During sales schedule approval, the following dates in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session can be changed into one of the delivery moments defined in the pattern:

- **Shipment Based**
  Requirement Start Date
- **Receipt Based**
  Planned Receipt Date

As a result, planned warehouse orders have dates that are in accordance with the desired delivery moments as specified in the **Delivery Pattern** field of the Sales Contract Line Logistic Data (tdsls3102m000) session.

Manual consolidation options

Although automatic consolidation of schedule lines drastically reduces the number of planned warehouse orders, you may still consider the number of planned warehouse orders too high.

To further reduce or to control the number of planned warehouse orders, you can manually specify consolidation options during or after schedule approval. For existing or new planned warehouse orders, you can consolidate schedule line requirements for a specific requirement start date, including past requirements, into one planned warehouse order.

You can use the Approve Sales Schedules (tdsls3211m000) and Approve Pick-up Sheets (tdsls3211m200) sessions to specify consolidations options during approval.

You can use the Consolidate Planned Warehouse Orders (tdsls3220m000) and Consolidate Planned Warehouse Orders (Pick-up Sheets) (tdsls3220m100) sessions to specify consolidations options after schedule approval.

You can specify these consolidation options:

Ignore Delivery Pattern	-
Move Past Requirements	**New Requirement Start Date**
Move Non-Pattern Requirements	**New Requirement Start Date**
Combine Planned Warehouse Orders	**New Requirement Start Date**
Original Requirement Start Date From	**Original Requirement Start Date To**

Example

Delivery pattern: ship on Wednesday 7 November, 11.00 am

Today: 1 November

Schedule line	Quantity	Start date	Requirement
1	3	Wednesday 31 October, 7.00 am	past
2	5	Monday 5 November, 7.00 am	nonpattern
3	2	Wednesday 7 November, 11.00 am	pattern

Depending on your settings, one planned warehouse order can be created with a quantity of 10 for, for example, Monday 5 November, 11.00 am.

Updating planned warehouse orders

If a planned warehouse order exists for a schedule line, the schedule line can be updated by processing new sales releases.

For the following sales schedules, processing a sales release gives the following results:

- **Non-referenced schedules**
  A new sales schedule revision number.
- **Referenced shipping schedules**
  A new sales schedule revision number if the **Schedule Revisions for Referenced Shipping Schedules** check box is selected in the Schedule Terms and Conditions (tctrm1131m000) session.
- An updated schedule line if the **Schedule Revisions for Referenced Shipping Schedules** check box is cleared in the Schedule Terms and Conditions (tctrm1131m000) session.
- **Sequence Shipping Schedules**
  A new sales schedule revision number if the **Schedule Revisions for Sequence Shipping Schedules** check box is selected in the Schedule Terms and Conditions (tctrm1131m000) session and all release lines of a specific release have the same item, sales office, ship-to business partner, and customer order number.
- An updated schedule line if the **Schedule Revisions for Sequence Shipping Schedules** check box is cleared in the Schedule Terms and Conditions (tctrm1131m000) session.

Updating (planned) warehouse orders

When approving new schedule line revisions or schedule line updates, LN searches for existing planned warehouse orders with a status other than **Finalized** or **Canceled**.

Planned warehouse orders are selected based on the following data:

- **Non-referenced Shipment Based schedules**
  Schedule, **Schedule Type** and **Requirement Start Date** from the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.
- **Non-referenced Receipt Based schedules**
  Schedule, **Schedule Type** and **Requirement Planned Receipt Date** from the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.
- **Referenced schedules**
  Shipment Reference, **Customer Schedule Number** and **Reference** from the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session for the same schedule and schedule type.
- **Pick-up sheets**
  Sold-to Business Partner, **Ship-to Business Partner** and **Shipment Reference** from the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session for the same schedule and schedule type.

The last planned warehouse order is selected first for updating the quantity and other information. If no existing planned warehouse orders can be updated, new planned warehouse orders can be created.

The following parameters control the planned warehouse order update and creation:

- **Warehousing Order Types (whinh0110m000)**
  Allow Updating Outbound Order Lines upto and including
- **Schedule Terms and Conditions (tctrm1131m000)**
  Always Automatically Update and Create New Planned Warehouse Orders
- **Only Create Additional Planned Warehouse Order for Quantity Increases**

Existing planned warehouse order can be updated

After approval, schedule line updates or new schedule line revisions are handled as follows:

- The planned warehouse order is updated in the Sales Schedule Planned Warehouse Orders (tdsls3520m000)
- The existing planned warehouse order link is updated in the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.
- The warehouse order, if available, is updated in the Outbound Order Lines (whinh2120m000) session.

Note

Approving schedule lines with zero quantities sets the **Status** of the planned warehouse order and the linked warehouse order to **Canceled**. Planned warehouse orders are also canceled when new revisions for non-referenced schedules do no longer match with the existing **Requirement Start Date** for **Shipment Based** schedules and the **Planned Receipt Date** for **Receipt Based** schedules.

Existing planned warehouse order cannot be updated - creation of new planned warehouse order is allowed

After approval, schedule line updates or new schedule line revisions are handled as follows:

- **Schedules with revisions**
  The existing planned warehouse order cannot be updated, but the **Schedule Revision** is updated in the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session for the existing planned warehouse order link. As a result, the existing planned warehouse order is linked to the latest revision.
- A new planned warehouse order is created in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session with an **Ordered Quantity** that reflects the difference between the new original ordered quantity and the old original ordered quantity.
- A new link is created between the new planned warehouse order and the new sales schedule line revision in the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.
- **Schedules without revisions**
  The existing planned warehouse order and the revision for the existing planned warehouse order link cannot be updated.
- A new planned warehouse order is created in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session with an **Ordered Quantity** that reflects the difference between the new original ordered quantity and the old original ordered quantity.
- A new link is created for the new planned warehouse order with the same sales schedule line revision as the previous planned warehouse order (revision 1) in the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session.

Note

If, for sequence shipping schedules with revisions, a planned warehouse orders cannot be updated, it is not allowed to create a new planned warehouse order for the complete or remaining quantity. You must take manual action, for example, by updating the shipping sequence information in the Shipping Sequence (whinh4520m000) session.

LN gives a message when schedule revisions/updates cannot update the warehousing process and unexpected or undesired deliveries will take place. If desired, you can manually intervene in the shipment process.

Simulating the update of planned warehouse orders

Before a sales schedule (revision) is approved, you can first simulate the schedule approval to view the expected updates to the existing planned warehouse orders. This enables you to understand the changes and to, for example, manually intervene or not approve this sales schedule (revision) and wait for the next changed schedule (revision).

Dependent on the type of schedule, you can simulate the sales schedule approval as follows:

- By selecting the **Simulate Approval** check box in the Approve Sales Schedules (tdsls3211m000) and Approve Pick-up Sheets (tdsls3211m200) sessions.

- By clicking **Simulate Approval** on the appropriate menu of the Sales Schedule (tdsls3611m000), Sales Schedules (tdsls3111m000), and Pick-up Sheets (tdsls3107m100) sessions.
- By selecting the **Simulate Approval** check box in the Process Sales Releases (tdsls3208m000) session for referenced schedules without revisions.

Open planned warehouse orders

If a sales release is converted into a new sales schedule revision, LN assumes that the same number of sales schedule lines (requirements) are communicated as on the previous revision. However, it can occur that a specific sales schedule line is no longer communicated on the new sales schedule revision. As a result, the planned warehouse order linked to this old sales schedule line stays 'open'.

If this 'open' planned warehouse order still allows updates, the **Ordered Quantity** of this planned warehouse order is reduced with the sales schedule line's **Ordered Quantity** from the Sales Schedule Planned Warehouse Order Links (tdsls3521m000) session for the previous revision. When the quantity of the planned warehouse order becomes zero, its status is set to **Canceled**.

Delivering planned warehouse orders

When deliveries are executed for a planned warehouse order with the **Released to Warehousing** or **Partially Delivered** status, a record is inserted in the Sales Schedule Actual Delivery Lines (tdsls3140m000) session. The planned warehouse order, warehouse order link(s), and schedule line(s) are updated with the delivery information.

Note

For referenced schedules, a reference distribution is available below the actual delivery line in the Sales Schedule Actual Delivery Line Reference Distribution (tdsls3542m000) session.

Overdeliveries

If more is delivered than originally ordered and multiple schedule lines are linked to one planned warehouse order, an overdelivery is registered on the last planned warehouse order link and related schedule line.

Example

Schedule line	Ordered Quantity
10	10
20	30

Schedule lines 10 and 20 are consolidated into one planned warehouse order with an original ordered quantity of 40.

If a quantity of 50 is delivered, the following are applicable:

- A delivered quantity of 10 is registered on planned warehouse order link for schedule line 1
- A delivered quantity of 40 is registered on planned warehouse order link for schedule line 2

If the total shipped amount exceeds the originally ordered, total schedule amount, the business partner balance is adjusted.

Underdeliveries

If, due to inventory shortages, original ordered quantities cannot be shipped for planned warehouse orders, the following fields in the Sales Contract Line Logistic Data (tdsls3102m000) session determine how the shortage is handled:

- **Shipping Constraint**
- **Ship & Carry Forward**

Shipping Constraint

- **Ship Line Complete**
  The planned warehouse order must be delivered as a whole. Lack of inventory results in the postponement of shipment of the planned warehouse order.
- **Ship Line & Cancel**
  The available inventory is shipped. If sufficient inventory exists, this results in a complete shipment. Lack of inventory results in cancellation of the planned warehouse order for the remaining quantity.
- **None**
  No shipping constraint applies. You can define the **Ship & Carry Forward** field.

Ship & Carry Forward

- **No**
  Lack of item inventory results in a back order for the planned warehouse order.
- **Carry Forward or Cancel**
  The remaining required quantity is transferred to the earliest next planned warehouse order that can be updated for the same schedule. If the next planned warehouse order can no longer be updated, a new planned warehouse order is created for the remaining required quantity. This new planned warehouse order is linked to the original planned warehouse order.
- If no next planned warehouse order can be found, the remaining required quantity for the planned warehouse order is canceled. Therefore, the **Canceled Quantity** is filled in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session.
- **Carry Forward or Create Backorder**
  The remaining required quantity is transferred to the earliest next planned warehouse order that can be updated for the same schedule. If the next planned warehouse order can no longer be updated, a new planned warehouse order is created for the remaining required quantity. This new planned warehouse order is linked to the original planned warehouse order.

- If no next planned warehouse order can be found, lack of item inventory results in a back order for the planned warehouse order.

Ship & Carry Forward set to No

If a final shipment is received from Warehousing and the delivered quantity is less than the original ordered quantity for the planned back order, a new planned warehouse order is created for the original planned warehouse order in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session.

The following apply to this new planned warehouse order:

- The **Backorder (Y/N)** check box is selected.
- The **Status** is **Planned**.
- The **Parent Warehouse Order Line** and **Parent Order Warehouse Order Line Sequence** fields are filled to refer to the original planned warehouse order.
- The **Requirement Start Date** and **Planned Receipt Date** are defaulted from the original planned warehouse order.
- This planned warehouse order is automatically released to Warehousing if the **Automatically Release Backorders for Referenced Schedules** or **Automatically Release Backorders for Non-Referenced Schedules** check boxes are selected in the Schedule Terms and Conditions (tctrm1131m000) session.

Ship & Carry Forward set to Carry Forward or Cancel or Carry Forward or Create Backorder

If a final shipment is received from Warehousing and the delivered quantity is less than the original ordered quantity for the planned warehouse order, the following steps are completed:

1. The remaining required quantity is transferred to the earliest next planned warehouse order that can be updated for the same schedule.

   The **Ordered Quantity** and **Carry Forward Quantity** are updated in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session. Also the **Parent Warehouse Order Line** and **Parent Order Warehouse Order Line Sequence** fields are filled to refer to the original planned warehouse order. The **Ordered Quantity** of the planned warehouse order link(s) and the related schedule line(s) are not updated. Shipping the next warehouse order is handled as an over-delivery. This means that the last planned warehouse order link and last schedule line are updated with a delivered quantity higher than originally ordered.

2. If the next planned warehouse order can no longer be updated, a new planned warehouse order is created for the remaining required quantity. This new planned warehouse order is linked to the original planned warehouse order and the last schedule line.

   The **Ordered Quantity** is the remaining required quantity of the original planned warehouse order.

3. If no next planned warehouse order can be found, and the **Ship & Carry Forward** field is set to:
   - **Carry Forward or Cancel**, the remaining required quantity for the planned warehouse order is canceled. The **Canceled Quantity** is filled in the Sales Schedule Planned Warehouse Orders (tdsls3520m000) session.

- **Carry Forward or Create Backorder**, a new planned warehouse order is created for the remaining required quantity. This new planned warehouse order is linked to the original planned warehouse order.

Note

Back orders cannot be created or inventory shortages cannot be carried forward if planned warehouse orders are created for:

- Pick-up sheets
- Sequence shipping schedules
- Referenced schedules linked to a warehousing order for which the **Unique Shipment Reference per Shipment** check box is selected in the Warehousing Order Types (whinh0110m000) session.
- Referenced schedules with consolidated references

For these schedules, the remaining required quantity for the planned warehouse order is canceled.

Sales schedule procedure

Sales schedule procedure

The main sales schedule procedure consists of the following parts:

1. To create and update sales releases.
2. To create and update sales schedules.
3. To determine and use sales schedule authorizations.
4. To determine and use sales schedule cumulatives.
5. To approve sales schedules.
6. To release sales schedules or planned warehouse orders to Warehousing.
7. To release sales schedules or planned warehouse orders to Invoicing.
8. To process sales schedules.

Step 1: To create and update sales releases

In the sales schedule procedure, sold-to business partners use sales releases to inform you about their long term and short term schedule requirements. These requirements are usually received by electronic data interchange (EDI), but can also be received by a Business Object Document (BOD) or can be manually entered.

The schedule requirements in a sales release represent a customer's external view.

For more information, refer to *Sales releases (p. 101)*.

Step 2: To create and update sales schedules

Sales schedule requirements can be manually processed into sales schedules in the Process Sales Releases (tdsls3208m000) session, or can be automatically processed if the **Automaticallly Process Sales Schedule Releases** check box is selected in the Sold-to Business Partner (tccom4110s000) session. You can also manually enter sales schedules.

The following are applicable to sales schedules:

- The schedule requirements in a sales schedule represent a supplier's internal view.
- A sales schedule line contains a **Requirement Type** in time, used for scheduling. This requirement type can be **Immediate**, **Firm**, or **Planned**.
- For non-referenced schedules, schedule updates are handled by sales schedule revision numbers. For referenced schedules, schedule updates can be handled by just updating the schedule or by inserting new sales schedule revision numbers.
- Sales schedule lines can receive a required quantity of zero. In this case, LN directly cancels the sales schedule line.

You can view sales schedule data in the following sessions:

- Sales schedules in the Sales Schedules (tdsls3111m000) session.
- Sales schedule lines in the Sales Schedule Lines (tdsls3107m000) session.
- Pick-up sheets in the Pick-up Sheets (tdsls3107m100) session.
- Pick-up sheet lines in the Pick-up Sheet (tdsls3107m200) session.
- Sequence shipping information in the Sequence Shipping Information (tdsls3517m000) session.

For more information, refer to

- *EDI and sales schedules (p. 100)*
- *Sales schedule line requirement type (p. 110)*
- *Sales schedule revisions (p. 108)*
- *Referenced sales schedules (p. 104)*
- *Pick-up sheets (p. 106)*
- *Zero required quantity for sales schedule lines (p. 113)*

Step 3: To determine and use sales schedule authorizations

In the sales schedule procedure, you ship the goods based on the requirement type. The **Firm** requirement type, however, can deviate from the earlier received **Planned** requirement type. When authorizations are used, before the **Firm** requirement type is communicated, your sold-to business partners give you permission to fabricate goods or to buy raw materials up to a certain quantity level before they really need the goods. The essence of an authorization is that your sold-to business partners bear the risk if they do not need the goods. In other words, they must pay for the fabrication and/or raw materials, whether or not the goods are actually called-off.

Authorization quantities can only be calculated for schedules that are received in a material release.

For more information, refer to *Sales schedule authorizations (p. 115)*.

Step 4: To determine and use sales schedule cumulatives

In the sales schedule procedure, cumulatives (CUMs) are used to monitor total cumulated quantities of sales schedules.

The following types of sales schedule cumulatives are available:

- **Shipped CUM**
  The total cumulated quantity that you shipped for a specific sales schedule.
- **Received CUM**
  The total cumulated quantity that your ship-to business partner received for a specific sales schedule.
- **Invoiced CUM**
  The total cumulated quantity that you invoiced for a specific sales schedule.

For non-referenced sales schedules, cumulatives enable you to:

- Check and adjust the sales schedules for underdelivery and overdelivery.
- Monitor whether your business partner's received CUM matches with your shipped CUM. If not, the disputes can be solved.

LN:

- Does not check or adjust **Material Releases**, referenced schedules, pick-up sheets, and delivery contracts for underdelivery or overdelivery.
- Only matches received CUMs with shipped CUMs for **Material Releases** and **Shipping Schedules**.
- Does not calculate sales schedule cumulatives for **Pick-up Sheets**.

For more information, refer to

- *Sales schedule cumulatives (p. 120)*
- *Adjusting sales schedules (p. 129)*
- *Reconciling sales schedules (p. 136)*

Step 5: To approve sales schedules

To be able to actually process sales schedules, the sales schedules with the **Created** status must be approved. If a sales schedule is approved, it receives the **Approved** status.

If the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session, when the sales schedule is approved, LN creates a planned warehouse order.

For non-referenced sales schedules, during the approval process:

- You can check and adjust the sales schedules for underdelivery and overdelivery.
- LN reconciles the sales schedule. Reconciling means checking whether your business partner's **Received CUM** matches with your **Cumulative Shipped Quantity**. If the CUMs do not match, disputes are generated that must be solved.

For more information, refer to:

- *Approving sales schedules (p. 133)*
- *Planned warehouse orders (p. 85)*
- *Adjusting sales schedules (p. 129)*
- *Reconciling sales schedules (p. 136)*

Step 6: To release sales schedules to Warehousing

Approved sales schedules or planned warehouse orders must be released to Warehousing.

For more information, refer to *Sales schedules and Warehousing (p. 147)*.

Step 7: To release sales schedules to Invoicing

If the items that are ordered with the sales schedule line or planned warehouse order are (partially) shipped, you can invoice the delivered goods. To be able to send the invoice, you must release the sales schedule or planned warehouse order to Invoicing.

You can also release invoice correction records to Invoicing. For example, if shipped items are lost during shipment and you do not want your business partner to pay for these lost items.

For more information, refer to *Sales schedules and Invoicing (p. 149)*.

Step 8: To process sales schedules

If the invoice for a sales schedule line is sent, the sales schedule line has the **Invoiced** status. You can process sales schedules whose lines have the **Invoiced** status. Use the Process Delivered Sales Schedules (tdsls3223m000) session to process sales schedules.

For more information, refer to *Processing and deleting sales schedules (p. 152)*.

Note

If the relation with a business partner for an item has come to an end or if you want to change the logistic agreements between you and your business partner, you can terminate the sales schedule. For more information, refer to *Terminating sales schedules (p. 153)*.

EDI and sales schedules

Incoming EDI messages, sent by a sold-to business partner or ship-to business partner, can provide the information based on which you can process sales schedules to deliver the requirements of the sold-to business partner.

The following EDI messages are used to import data from your sold-to business partner or ship-to business partner into sales schedules:

Material Release

Examples of material release messages are: BEM MRL001 (BEMIS). The data imported with this message consists of long-term planning information from your business partner (for instance, from MRP).

Shipping Schedule

Examples of a shipping schedule messages are: BEM SHP001 (BEMIS). The data imported with this message consists of short term ordering information (for instance, the requirements for the next two weeks).

Sequence Shipping Schedule

Examples of sequence shipping schedule messages are: BEM SEQ001 (BEMIS). This message contains the same data as the BEM SHP001 message, but also includes a specific sequence in which the material must be unloaded at the delivery dock.

Note

Received EDI messages can be processed automatically or interactively. When the previously-mentioned EDI messages are processed, LN puts through the received data to the sales release and sales schedule sessions.

Sales releases

Sales releases are used to group, by release type, a customer's sales schedule requirements. Sales releases are usually received by electronic data interchange (EDI), but can also be manually specified, or received by a Business Object Document (BOD). Sales releases or separate release lines can be processed and converted to sales schedules. A sales release represents the external customer view for schedule requirements, while the sales schedule represents the internal supplier view.

Sales release revision numbers identify the updates that were sent to the business partner.

The first sales release that is created for a specific combination of the following characteristics receives the sales release revision number one:

- **Sold-to Business Partner**
- **Ship-to Business Partner**
- **Ship-to Address**
- **Release Type**
- **Shipment or Receipt Based**
- **Schedule Quantity Qualifier**
- **Sales Release Origin**
- **Customer Release**

When a new sales release revision is created for these characteristics, a sales release revision is created with revision number two, and so on.

Note

If the **Automaticallly Process Sales Schedule Releases** check box is cleared in the Sold-to Business Partner (tccom4110s000) session, you can update sales releases before they are converted to sales schedules in the Process Sales Releases (tdsls3208m000) session. If the **Automaticallly Process Sales Schedule Releases** check box is selected, sales releases are automatically converted to sales schedules, which means you cannot update them.

Sales release types and sales schedule types

Sales releases and sales schedules are always of a specific type. Sales releases can only contain sales schedules of the same type.

The following types are available:

- **Material Release**
  Over the long term and mid term (in general periods of some months), planning information is supplied from the business partner. In general, a material release can be considered as a planning release. For non-referenced schedules, however, the material release can also contain the actual order. In this case the release is called a material release with shipping capabilities.
- **Shipping Schedule**
  On a shorter time basis, shipping releases that contain more detailed and fixed information are sent. This information is gathered on the basis of shop floor requirements, miscellaneous orders, and so on. Shipping schedules contain ordering information and inform you about actual deliveries. This sales schedule type can be used for non-referenced sales schedules as well as referenced sales schedules.
- **Sequence Shipping Schedule**
  Over the short term (in general a period of twenty days of which five days are fixed), sequence shipping information is communicated. Sequence shipping schedules are a supplement to the material release or the shipping schedule with precise information about the production or deliveries of the requirements. These schedules can include the production or delivery sequence, and the order, the place, and the time of unloading after shipment. This sales schedule type is only used if the sales schedule is referenced.
- **Pick-up Sheet**
  Over the short term, pick-up information is supplied from the business partner. A pick-up sheet is a document that constitutes a list of items to be picked-up at the supplier's site by a specific carrier for transport to the customer on a specific day. In general, these are daily requirements. Sales releases of the **Pick-up Sheet** type are converted to referenced sales schedules of the **Shipping Schedule** type.

Note

The type of sales schedule that you can receive for a specific item and business partner combination is determined by one of the following:

- The field settings in the **Schedule Message Types** group box of the Sales Contract Line Logistic Data (tdsls3102m000) session.
- The **EDI message** field in the Items - Sales Business Partner (tdisa0510m000) session.

You can view sales release data in the following sessions:

Sales release type	Sales releases	Release lines	Release line details
Material Release	Sales Releases (tdsls3512m000)	Sales Release Lines (tdsls3508m000)	Sales Release Line Details (tdsls3515m000)
Shipping Schedule	Sales Releases (tdsls3512m000)	Sales Release Lines (tdsls3508m000)	Sales Release Line Details (tdsls3515m000)
Sequence Shipping Schedule	Sales Releases (tdsls3512m000)	Sales Release Lines - Sequence Shipping Schedule (tdsls3116m000)	-
Pick-up Sheet	Sales Releases (tdsls3512m000)	Sales Release Lines - Pick-up Sheet (tdsls3109m000)	Sales Release Line Details - Pick-up Sheet (tdsls3116m100)

Note

You can also use the Sales Release (tdsls3612m000) session to view, enter, and maintain sales release data.

Sales release lines

Whether a sales release line refers to a sales schedule or to a sales schedule line, depends on the release type. If the release type is:

- **Material Release** or **Shipping Schedule**, a sales release line refers to a sales schedule.
- **Sequence Shipping Schedule**, a sales release line refers to a sales schedule header, sales schedule line, and sequence shipping information.
- **Pick-up Sheet**, a sales release line refers to a combination of carrier and shipment reference.

Sales release line details

If the release type is:

- **Material Release** or **Shipping Schedule**, a sales release line detail refers to a sales schedule line.
- **Pick-up Sheet**, a sales release line detail refers to a sales schedule header, sales schedule line, and pick-up sheet line.

Referenced sales schedules

On referenced sales schedules, schedule requirements are communicated based on (shipment) references.

- A **Reference** is used to identify specific requirements that your business partner needs in a specific sequence at a specific line station of the assembly line.
- A **Shipment Reference** is used to identify the shipment. If you use pick-up sheets, the shipment reference also identifies the pick-up sheet for the linked sales schedule line.

If you receive a referenced sales schedule, the **Referenced Schedule** check box is selected in the Sales Schedules (tdsls3111m000) session.

Master data

To use referenced schedules, the following master data setup is required:

- **Items - Sales Business Partner (tdisa0510m000)**
  Select the **Referenced Schedule** check box.
- Set the **EDI message** field to **Shipping Schedule**, **Shipping Schedule only**, or **Sequence Shipping Schedule**.
- **Sales Contract Line Logistic Data (tdsls3102m000)**
  Select the **Referenced Schedule** check box.
- Select the **Use Shipping Schedule**, **Use Sequence Shipping Schedule**, or **Use Pick-up Sheet** check boxes.

The value of the **Use Contracts for Schedules** check box in the Sales Contract Parameters (tdsls0100s300) session determines the session from which the master data is retrieved.

Note

If the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session, the following are applicable:

- The **Schedule Revisions for Referenced Shipping Schedules** and **Schedule Revisions for Sequence Shipping Schedules** check boxes in the Schedule Terms and Conditions (tctrm1131m000) session determine whether sales schedule revision numbers are used.
- When a planned warehouse orders line is linked to one or more referenced schedule lines, the references are stored in the Planned Warehouse Order Reference Distribution (tdsls3522m000) and Sales Schedule Actual Delivery Line Reference Distribution (tdsls3542m000) sessions.

Referenced shipping schedules

If you receive an update of a referenced shipping schedule, the **Schedule Revisions for Referenced Shipping Schedules** check box in the Schedule Terms and Conditions (tctrm1131m000) session determines how the update is processed.

- If this check box is selected, a new sales schedule revision number is created.

- If this check box is cleared, the sales schedule is updated. To keep track of the updates, LN files the sales schedule line updates as revisions in the Sales Release Line Details (tdsls3515m000) session (unless the schedule line is manually specified or updated). From the appropriate menu of this session, you can start the Sales Schedule Lines (tdsls3107m000) session to view the sales schedule line to which the sales release line detail record refers.

Note

- For each **Reference**, only one sales schedule line can exist.
- For each **Shipment Reference**, multiple sales schedule lines can exist.

Pick-up sheets

If a referenced sales schedule of the **Shipping Schedule** type is created for a pick-up sheet, LN:

- Selects the **Linked to Pick-up Sheets** check box in the Sales Schedules (tdsls3111m000) session.
- Enters pick-up sheet header information in the Pick-up Sheets (tdsls3107m100) session, which contains business partner, carrier, and reference data.
- Enters pick-up sheet line information in the Pick-up Sheet (tdsls3107m200) session, which contains item, quantity, and date data. A pick-up sheet line refers to a sales schedule line. Therefore, if you double-click a pick-up sheet line, the Sales Schedule Lines (tdsls3107m000) session is started.

For more information, refer to *Pick-up sheets (p. 106)*.

Sequence shipping schedules

If you receive an update of a sequence shipping schedule, the **Schedule Revisions for Sequence Shipping Schedules** check box in the Schedule Terms and Conditions (tctrm1131m000) session determines how the update is processed.

- If this check box is selected, a new sales schedule revision number is created.
- If this check box is cleared, the sales schedule is updated. To keep track of the updates, LN files the sales schedule line updates as revisions in the Sequence Shipping Information (tdsls3517m000) session.

If a referenced sales schedule line of the **Sequence Shipping Schedule** type is created, LN enters:

- Sequence shipping information in the Sequence Shipping Information (tdsls3517m000) session, which informs you about the sequence in which your ship-to business partner needs the items on the assembly line at a specific line station.
- Shipping sequence details in the Shipping Sequence (whinh4520m000) session after release to Warehousing. In this session, you can view the shipping sequence data for each reference. You must ship the goods in the sequence that is specified in this session. Only the latest revision of the shipping sequence information is displayed.

Each sales schedule line results in one shipping sequence detail line. For more information on shipping sequence details, refer to *Sales schedules and Warehousing (p. 147)*.

Approving referenced sales schedules

Referenced sales schedule can be automatically or manually approved. For more information, refer to *Approving sales schedules (p. 133)*.

Note

For referenced sales schedules, no adjustments take place.

Pick-up sheets

A pick-up sheet is a list of items that a carrier must pick-up at the supplier's site for transport in one shipment to the customer on a specific day. A pick-up sheet is identified by a specific reference number, called the shipment reference, which originates from the customer. This shipment reference is used to identify pick-up sheets, shipments, and payments. Usually, the shipment exactly covers the pick-up sheet requirements, but the required goods on the pick-up sheet are spread among different sales schedules.

You can only use pick-up sheets if the following check boxes are selected in the Sales Contract Line Logistic Data (tdsls3102m000) session for the sales contract to which the sales schedule is linked:

- **Referenced Schedule**
- **Use Shipment Reference**
- **Use Pick-up Sheet**

Sales schedule requirements are grouped in pick-up sheets based on the following common characteristics:

- **Sold-to Business Partner**
- **Ship-to Business Partner**
- **Shipment Reference**
- **Carrier/LSP**
- **Start Date**
- **End Date**

The following are applicable to a pick-up sheet:

- Over-deliveries are not allowed.
- Shortages must be communicated to the customer as soon as possible.
- The contract that is linked to a sales schedule determines whether or not a sales schedule can contain requirements for pick-up sheets.
- Because pick-up sheets must be regarded as firmly settled, they cannot be automatically updated or automatically adjusted. Until approval, only manual changes are allowed.

Pick-up sheet procedure

The main pick-up sheet procedure consists of the following steps:

Step 1: To create and update sales releases

A pick-up sheet is manually entered or received by a Business Object Document (BOD) in the following sessions:

- Sales Releases (tdsls3512m000)
- Sales Release Lines - Pick-up Sheet (tdsls3109m000)
- Sales Release Line Details - Pick-up Sheet (tdsls3116m100)

Step 2: To create and update pick-up sheets

Sales releases of the **Pick-up Sheet** type can be manually processed into referenced sales schedules of the **Shipping Schedule** type in the Process Sales Releases (tdsls3208m000) session, or can be automatically processed. This depends on the setting of the **Automaticallly Process Sales Schedule Releases** check box in the Sold-to Business Partner (tccom4110s000) session.

If sales schedules are created for pick-up sheets, the following is executed:

- The **Referenced Schedule** and **Linked to Pick-up Sheets** check boxes are selected for the sales schedule in the Sales Schedules (tdsls3111m000) session.
- Pick-up sheet header information is entered in the Pick-up Sheets (tdsls3107m100) session, which contains business partner, carrier, and reference data.
- Pick-up sheet line information is entered in the Pick-up Sheet (tdsls3107m200) session, which contains item, quantity, and date data. A pick-up sheet line refers to a sales schedule line. Therefore, if you double-click a pick-up sheet line, the Sales Schedule Lines (tdsls3107m000) session is started.

Step 3: To approve pick-up sheets

If you can deliver the pick-up sheet line quantities, the pick-up sheets with the **Created** status must be approved. Pick-up sheets are automatically approved, or must be manually approved in the Approve Pick-up Sheets (tdsls3211m200) session. This depends on the setting of the **Automatically Approve Referenced Sales Schedules** check box in the Schedule Terms and Conditions (tctrm1131m000) or Sales Contract Line Logistic Data (tdsls3102m000) sessions.

If the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session, LN creates a planned warehouse order when the pick-up sheet is approved.

Note that one pick-up sheet can be linked to multiple sales schedules and that the lines of a pick-up sheet can be sales schedule lines of different sales schedules.

If you cannot deliver the pick-up sheet line quantities, you must discuss this with your customer and manually update the required quantities on the pick-up sheet.

For more information, refer to:

- *Approving sales schedules (p. 133)*
- *Planned warehouse orders (p. 85)*

Step 4: To release pick-up sheets to Warehousing

Approved pick-up sheets or planned warehouse orders for pick-up sheets are automatically released to Warehousing, or manually in the Release Pick-up Sheets to Warehousing (tdsls3207m100) session. This depends on the setting of the **Automatically Release Referenced Sales Schedules to Order** check box in the Schedule Terms and Conditions (tctrm1131m000) session.

In Warehousing, you can convert the pick-up sheet quantities to a final transport order that is communicated to the carrier. Based on this transport order, the transport planning and routing is optimized and the carrier's copy of the pick-up sheet is created.

You can process the pick-up sheet, prepare the shipment, create the appropriate delivery documents, and transfer the goods to the staging zone. When the items are picked up, the carrier checks the staged goods on quantities, customer item code, handling units of the goods, and so on. Next, the carrier transfers the goods to the customer. Optionally, you can notify the customer about departure of the goods.

For more information, refer to *Sales schedules and Warehousing (p. 147)*.

Step 5: To receive payments

Payment, which is triggered based on the receipt of the goods, is generally executed by means of self-billing. A payment notification is sent to you and the carrier.

For more information, refer to Self billing.

Based on the **Shipment Reference**, you can also release a pick-up sheet or a planned warehouse order for a pick-up sheets to Invoicing in the Release Sales Orders/Schedules to Invoicing (tdsls4247m000) session.

For more information, refer to *Sales schedules and Invoicing (p. 149)*.

Step 6: To process sales schedules

In the Process Delivered Sales Schedules (tdsls3223m000) session, you can process sales schedules with the **Invoiced** status.

For more information, refer to *Processing and deleting sales schedules (p. 152)*.

Sales schedule revisions

Sales schedule revision numbers are used to uniquely identify the revision of the sales schedule. They indicate the sales schedule updates that are sent by your business partner.

Note

LN automatically uses revision numbers for non-referenced sales schedules. For referenced shipping schedules and sequence shipping schedules, the **Schedule Revisions for Referenced Shipping Schedules** and **Schedule Revisions for Sequence Shipping Schedules** check boxes in the Schedule Terms and Conditions (tctrm1131m000) session determine whether revision numbers are used.

The first sales schedule that is created for a specific combination of the following characteristics receives the sales schedule revision number one:

- **Sold-to Business Partner**
- **Ship-to Business Partner**
- **Item**
- **Sales Office**
- **Invoice-to Business Partner**
- **Pay-by Business Partner**
- **Schedule Type**
- **Referenced Schedule**
- **Contract**
- **Contract Position**
- **Contract Office**
- **Customer Order**, if the **Use Customer Order for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session and the **Action on Deviating Customer Order** is set to **Block** in the Sales Contracts (tdsls3500m000) session.

When a new sales schedule is received for these characteristics, a sales schedule revision is created with revision number two, and so on.

For sequence shipping schedules, a new schedule revision is created only if all release lines of a specific release have the same item, sales office, ship-to business partner, and customer order number.

When the new sales schedule revision is approved, the previous sales schedule revision and its requirements are no longer valid and LN replaces this sales schedule revision. Whether a sales schedule line that is linked to the old sales schedule revision can receive the **Replaced** status depends on the schedule line's current status and the existence of a linked outbound order line.

Replacement allowed

If a sales schedule revision is replaced and a related sales schedule line has the **Created**, **Adjusted**, or **Approved** status, the sales schedule line's status is changed to **Replaced**.

Note

If a sales schedule line is already approved in the approval process, the results of the approval process are undone if the schedule line:

- Has the **Approved** status.
- Has the **Order Generated** status and the outbound process is not yet started for the schedule line.

Replacement not allowed

If a sales schedule revision is replaced and a linked sales schedule line has the **Goods Delivered**, **Released to Invoicing**, or **Invoiced** status, you must finish the sales schedule procedure for these sales schedule lines until they have the **Processed** status.

In other words, although the revision as a whole is inactive, these schedule lines must still be processed on the previous revision because they are too far in the process.

Replacement under restrictions

If a sales schedule line is released to Warehousing, the related outbound order line determines whether the sales schedule line can be replaced.

You can specify until when an outbound order line is allowed to be updated, canceled, and removed on the **Outbound Process** tab of the Warehousing Order Types (whinh0110m000) session.

Sales schedule status

The status of a sales schedule that is replaced depends on the statuses of its sales schedule lines:

- If not all sales schedule lines have the **Processed**, or **Replaced** status, the sales schedule receives the **Replacing in Process** status.
- If all sales schedules lines have the **Processed**, or **Replaced** status, the sales schedule receives the **Replaced** status.

Tip

- If you want to decouple sales schedule revisions and warehouse orders, you can use planned warehouse orders. Planned warehouse orders handle the revisions of a sales schedule line and maintain the link between the sales schedule line (revision) and the real warehouse order to which the planned warehouse order is released. For more information, refer to *Planned warehouse orders (p. 85)*.
- You can delete old sales schedule revisions in the Delete Sales Schedule Revisions (tdsls3212m000) session.
- You can print the differences between revisions of a sales schedule in the Print Sales Schedule Variances (tdsls3415m000) session.

Sales schedule line requirement type

A requirement type represents a requirement in time, used for scheduling.

On a sales schedule line, the following requirement types can be communicated:

- **Immediate**
  These schedule requirements have a start date in the past at the time of creation. As a result, an under-delivery is applicable. These requirements must be shipped as soon as possible.
- **Firm**
  These schedule requirements are handled as actual orders that can be shipped.
- **Planned**
  These schedule requirement are sent to you for planning purposes only.

Note

- The value of the **Requirement Type** field in the Sales Schedule Lines (tdsls3107m000) session determines the actions LN carries out when you approve a sales schedule line. For more information on approving sales schedules, refer to *Approving sales schedules (p. 133)*.
- If the **Requirement Type** is **Firm** but the **Start Date** of the sales schedule line is before the system date, LN sets the **Requirement Type** to **Immediate**

Schedule types and requirement types

The **Use Contracts for Schedules** check box in the Sales Contract Parameters (tdsls0100s300) session determines from which session LN retrieves the data to determine the type of sales schedule and the requirements that can be received.

- **Use Contracts for Schedules is cleared**
  Data is retrieved from the Items - Sales Business Partner (tdisa0510m000) session.
- **Use Contracts for Schedules is selected**
  Data is retrieved from the Sales Contract Line Logistic Data (tdsls3102m000) session.

Items - Sales Business Partner (tdisa0510m000)

The **Requirement Type** is determined as follows:

Schedule Type	EDI message	Requirement Type
Shipping Schedule	**Shipping Schedule only**	**Firm** or **Immediate**
Material Release	**Shipping Schedule** or **Sequence Shipping Schedule**	**Planned**
Material Release	**Material Release**	Depends on the **Transaction Time Fence**

Sales Contract Line Logistic Data (tdsls3102m000)

The **Requirement Type** is determined as follows:

Schedule Message Types					Schedule Type	Requirement Type
Use Material Release	**Use Material Release for Firm Requirements**	**Use Shipping Schedule**	**Use Sequence Shipping Schedule**	**Use Pick-up Sheet**		
yes	no	yes	yes	yes	**Shipping Schedule** or **Sequence Shipping Schedule**	**Firm** or **Immediate**
yes	no	yes	yes	yes	**Material Release**	**Planned**
yes	yes	not applicable	not applicable	not applicable	**Material Release**	Depends on the **Transaction Time Fence**
no	no	yes	not applicable	not applicable	**Shipping Schedule**	**Firm** or **Immediate**
no	not applicable	no	yes	no	**Sequence Shipping Schedule**	**Firm** or **Immediate**
no	no	not applicable	not applicable	yes	**Shipping Schedule**	**Firm** or **Immediate**

Transaction Time Fence

If you only use material releases, the **Requirement Type** depends on the value of the **Transaction Time Fence** field.

- **All Lines**
  The **Requirement Type** is **Firm**
- **Lines in the FAB Period**
  If the sales schedule line's **Start Date** is before the FAB period's end date, the **Requirement Type** is **Firm**.
- If the sales schedule line's **Start Date** is after the FAB period's end date, the **Requirement Type** is **Planned**.

- **Lines in the Firm Period**
  The **Requirement Type** is equal to the **Customer Requirement Type**.

Legend

- The **Transaction Time Fence** is specified in the Items - Sales Business Partner (tdisa0510m000) and Sales Contract Line Logistic Data (tdsls3102m000) sessions.
- The **EDI message** is specified in the Items - Sales Business Partner (tdisa0510m000) session.
- The **Schedule Message Types** are specified in the Sales Contract Line Logistic Data (tdsls3102m000) session.
- The **Schedule Type** is specified in the Sales Schedules (tdsls3111m000) session.
- The **Customer Requirement Type** is specified in the Sales Schedule Lines (tdsls3107m000) session.
- The FAB period is the sales schedule's **Generation Date** as specified in the Sales Schedules (tdsls3111m000) session plus the number of days as specified in the **FAB Period** field of the Items - Sales Business Partner (tdisa0510m000) or Sales Contract Line Logistic Data (tdsls3102m000) sessions.

Zero required quantity for sales schedule lines

You can receive sales schedule lines with a required quantity of zero. The sales schedule line quantity can also be changed to zero when the sales schedule procedure is completed. When a sales schedule receives a required quantity of zero, an attempt to cancel the sales schedule line or the planned warehouse order is performed.

A sales schedule line can receive a required quantity of zero due to the following reasons:

- The sales schedule is adjusted. For more information, refer to *Adjusting sales schedules (p. 129)*.
- You manually reduce the required quantity to zero in the Sales Schedule Lines (tdsls3107m000) session.
- The processed sales release contains a quantity of zero for the schedule line.

It depends on the current status of the sales schedule line or the planned warehouse order if the sales schedule line or the planned warehouse order can be canceled.

Cancellation allowed

Sales schedule lines with the **Created**, **Adjusted**, or **Approved** status and planned warehouse orders with the **Planned** status can always be canceled.

Note

If a sales schedule line is already approved in the approval process, the results of the approval process are undone if the schedule line:

- Has the **Approved** status.

- Has the **Order Generated** status and the outbound process is not yet started for the schedule line.

Cancellation not allowed

Sales schedule lines with the **Goods Delivered**, **Released to Invoicing**, or **Invoiced** status and planned warehouse orders with the **Finalized**, **Released to Invoicing**, or **Invoiced** status cannot be canceled. You must finish the sales schedule procedure until they receive the **Processed** status.

Cancellation under restrictions

If a sales schedule line and linked planned warehouse order are released to Warehousing, the related outbound order line determines whether the planned warehouse order/sales schedule line can be canceled.

Note

You can specify until when an outbound order line is allowed to be canceled and removed on the **Outbound Process** tab of the Warehousing Order Types (whinh0110m000) session.

Order Generated or Released to Warehousing statuses

The following apply to a sales schedule line with the **Order Generated** status or a planned warehouse order with the **Released to Warehousing** status:

- If the outbound order line is allowed to be canceled, the outbound order line is deleted and the planned warehouse order/sales schedule line gets the **Canceled** status.
- If the outbound order line is not allowed to be canceled, the outbound order line and the planned warehouse order are set to **Canceled** and the sales schedule line gets the **Canceling in Process** status.
- If the outbound order line that is set to **Canceled** gets the **Shipped** status, the sales schedule line receives the **Canceled** status.

Partially Shipped or Partially Delivered statuses

The following apply to a sales schedule line with the **Partially Shipped** status or a planned warehouse order with the **Partially Delivered** status:

- If the outbound order line for the remaining quantity is allowed to be removed, the planned warehouse order receives the **Finalized** status and the sales schedule line receives the **Goods Delivered** status.
- If the outbound order line for the remaining quantity is not allowed to be removed, the outbound order line is set to **Canceled** and the sales schedule line keeps the **Partially Shipped** status. When the **Canceled** outbound order line receives the **Shipped** status, the sales schedule line receives the **Goods Delivered** status.
- The canceled part of the planned warehouse order quantity is updated on the planned warehouse order as the **Canceled Quantity**. Sales schedule lines linked to this planned warehouse order receive the **Goods Delivered** status.

- Sales schedule lines that are linked to a canceled planned warehouse order, have cancellation history records. The sum of the canceled quantities of these history records is equal to the canceled quantity of the linked planned warehouse order.

Sales schedule cumulatives and authorizations

Sales schedule authorizations

Sales schedule items are shipped based on the requirement type. The **Firm** requirement type, however, can deviate from the earlier received **Planned** requirement type.

If you use authorizations, your sold-to business partners give you permission to fabricate goods or to buy raw materials for a certain quantity level before communicating the **Firm** requirement type. By using this process, sold-to business partners must pay for the fabrication and/or raw materials regardless of whether the goods are called-off.

Several types of authorizations are available:

- **FAB authorization**
  The valid authorization to start the production for a quantity of items required on a sales schedule.
- **High FAB authorization**
  The highest FAB authorization that you received from your business partner for a specific sales schedule, counted from the latest CUM reset date on. Your business partner must pay for this quantity of produced but not yet shipped items.
- **RAW authorization**
  The valid authorization to buy raw material that is needed to produce a quantity of items that is required on a sales schedule.
- **High RAW authorization**
  The highest RAW authorization that you received from your business partner for a specific sales schedule, counted from the latest CUM reset date on. Your business partner must pay for the raw materials that you bought for this quantity of items.

Note

- In Sales, LN does not calculate any FAB or RAW authorization values, because you receive the authorizations from your business partner.
- FAB and RAW authorizations are only communicated for material releases.
- The High FAB authorization and High RAW authorization are not communicated by your sold-to business partner. LN calculates these values by searching for the highest sent FAB/RAW authorizations.

To receive authorizations

You receive the FAB/RAW authorizations for a sales schedule from your sold-to business partner. So, the FAB/RAW authorizations that you receive in the Sales Schedules (tdsls3111m000) session, reflect the FAB/RAW authorizations that are linked to your business partner's purchase release lines. If the

sales schedule is approved, LN files the received FAB/RAW authorizations in the FAB/RAW Authorizations (tdsls3134m000) session.

For more information on how your business partner determines the FAB/RAW authorizations, if your business partner uses LN, refer to *Purchase schedule authorizations (p. 49)*.

To reset authorizations

It depends on the value of the **Synchronize Cums** check box in the Schedule Terms and Conditions (tctrm1131m000) how and when the authorizations are reset.

Synchronize Cums is selected

If you want the cumulatives to be synchronized and reset based on the cumulative data received from an external component, your shipped cumulatives are compared and synchronized with the shipped cumulatives received from the external component when processing a sales release into a sales schedule (revision).

After a shipped cumulative record is found, the **Customer CUMs Reset Date** from the Sales Release Lines (tdsls3508m000) session can fall after the **Cumulative Reset Date** in the Shipped CUM (tdsls3532m000) session. In this case, the authorizations must be reset.

To reset FAB and RAW authorizations

Before authorizations can be reset, a reset quantity must be calculated.

This quantity is calculated as follows:

Cumulative Shipped Quantity from Shipped CUM (tdsls3532m000) - **Cumulative Shipped Quantity** from Sales Release Lines (tdsls3508m000)

For an example on resetting FAB/RAW authorizations, *To synchronize CUMs based on external component data (p. 125)*.

Synchronize Cums is cleared

Over time, the FAB authorizations and RAW authorizations can be incremented to very high values. To reduce these values, you can reset the FAB/RAW authorizations in the Reset Cumulatives (tdsls3230m000) session. Authorizations cannot be reset exactly when the year is changing. As a result, updates can be stored in the FAB/RAW Authorizations (tdsls3134m000) session after the reset date. By calculating a reset quantity, these values are also included in the reset process.

To reset the FAB/RAW authorizations successfully, the following conditions must be fulfilled:

- Suppliers and customers must use the same CUM reset date when resetting the FAB/RAW authorizations in the Reset Cumulatives (tdsls3230m000) session and the Reset Cumulatives (tdpur3230m000) session.
- Resetting can only take place when the releases sent by the customer, are received and approved by the supplier. If not, suppliers cannot approve releases that are processed after the reset date, because the reset dates are different.

- Suppliers must not update incoming releases or manually create new releases, because resetting can then result in wrong quantities.

Note

- You cannot reset FAB/RAW authorizations for the sales schedule if a reconciliation record exists with the **Dispute** status and the **Transaction Date** is before the CUM reset date. You can view sales schedule reconciliation records in the Sales Schedule Reconciliation (tdsls3131m000) session.
- The FAB/RAW information, as stored in the Sales Schedules (tdsls3111m000) session for a specific sales schedule revision, is never updated during the reset process. It is kept as history information.

To reset FAB and RAW authorizations

Step 1: To determine a reset quantity

If you reset FAB/RAW authorizations, LN first determines the reset quantity. LN retrieves the reset quantity from the last FAB/RAW authorizations record prior to the **CUM Reset Date** that you specified in the Reset Cumulatives (tdsls3230m000) session. Which quantity is the reset quantity depends on the **CUM Model used**, as specified in the Items - Sales Business Partner (tdisa0510m000) session and/or the Sales Contract Line Logistic Data (tdsls3102m000) session.

If the **CUM Model used** is:

- **Order Based**, the **Prior Required CUM** is the reset quantity.
- **Receipt Based**, the **Received CUM** is the reset quantity.

Step 2: To create a new FAB/RAW authorization record

LN creates a new FAB/RAW authorization record in the FAB/RAW Authorizations (tdsls3134m000) session:

- With a **Reset Date** equal to the **CUM Reset Date** as specified in the Reset Cumulatives (tdsls3230m000) session.
- For which the **Prior Required CUM** or the **Received CUM** is reset.
  If the **CUM Model used** is:
  - **Order Based**, LN decreases the **Prior Required CUM** with the reset quantity.
  - **Receipt Based**, LN decreases the **Received CUM** with the reset quantity.

To reset high FAB and high RAW authorizations

How the high FAB authorizations and high RAW authorizations are reset, is based on the setting of the **Authorizations to be** parameter in the Items - Sales Business Partner (tdisa0510m000) session/ Sales Contract Line Logistic Data (tdsls3102m000) session:

- **Carried Forward**
  The high FAB authorizations and high RAW authorizations are reduced by the reset quantity.

- **Reset**
  The high FAB authorizations and high RAW authorizations are equalized to the FAB authorization and RAW authorization values.

Carried Forward

If already FAB/RAW authorization records exist with release dates that are later than the **CUM Reset Date**, LN copies these records with the following adjustments:

- The **FAB Authorization**, **RAW Authorization**, **High FAB Authorization**, and **High RAW Authorization** are decreased with the reset quantity.
- The old **Reset Date** is replaced with the new **Reset Date**.

Reset

If already FAB/RAW authorization records exist with release dates that are later than the **CUM Reset Date**, LN:

- Decreases the **FAB Authorization** and **High FAB Authorization** of these records with the FAB reset quantity.
- Decreases the **RAW Authorization** and **High RAW Authorization** of these records with the RAW reset quantity.
- Replaces the old **Reset Date** with the new **Reset Date**.

Example

- FAB period = 4 weeks.
- Cumulative model = **Order Based**.
- Reset date = start week 3.
- The schedule lines are generated before the reset takes place.
- Schedule line 2 is received in week 3.
- Schedule line 3 is received in week 5.

Week	Line 1	-	Line 2	-	Line 3	-	CUMs after reset
-	Qty.	CUM	Qty.	CUM	Qty.	CUM	-
1	20	20	-	20	-	20	20
2	20	40	-	40	-	40	40
3	20	60	5	45	-	45	5
4	20	80	5	50	-	50	10

5	20	100	5	55	20	70	30
6	20	120	55	110	5	75	35
7	-	-	5	115	5	80	40
8	-	-	5	120	5	85	45
9	-	-	-	-	5	90	50
10	-	-	-	-	5	95	55

Authorizations to be **Carried Forward**

TOTALS	CUM Line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10
FAB	80	110	85	45
High FAB	80	110	110	70

The reset date starts in week 3. Because of the **Order Based** CUM model, resetting is performed based on the prior required CUM. At the end of week 2, the reset quantity is 40. When authorizations must be **Carried Forward**, the authorization cumulatives are updated by -40 from the reset date on (week 3).

If you take the same example, however, with the authorizations reset rather than carried forward, the high FAB is not updated but equalized to the FAB quantity. The calculation then arrives at:

TOTALS	CUM Line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10
FAB	80	110	85	45
High FAB	80	110	110	45

Sales schedule cumulatives

Cumulatives (CUMs) are the year-to-date totals for quantities shipped, received, and invoiced. You can use cumulatives to track if the sales schedule is ahead or behind schedule compared to the demand.

The following types of sales schedule cumulatives are available:

- **Shipped cumulatives**
  The total cumulated quantity that you shipped for a specific sales schedule. You can view the shipped CUMs in the Shipped CUM (tdsls3532m000) session and in the Sales Schedules (tdsls3111m000) session.
- **Received cumulatives**
  The total cumulated quantity that your ship-to business partner received for a specific sales schedule. You can view the received CUMs in the Shipped CUM (tdsls3532m000) session, the Sales Schedules (tdsls3111m000) session, and in the FAB/RAW Authorizations (tdsls3134m000) session.
- **Invoiced cumulatives**
  The total cumulated quantity that you invoiced for a specific sales schedule. You can view the invoiced CUMs in the Invoiced CUM (tdsls3533m000) session and in the Sales Schedules (tdsls3111m000) session.

Note

If the sales schedule is based on a sales contract with a linked terms and conditions agreement, in the Schedule Terms and Conditions (tctrm1131m000) session:

- Use the **Method of Shipped CUM update** field to define when the shipped CUMs are updated in the Shipped CUM (tdsls3532m000) session.
- Use the **Method of Last Shipment ID determination** field to define how the last shipment is determined for calculating received cumulatives.

Synchronizing schedule cumulatives

- **Based on cumulative model**
  If both customers and suppliers use LN to communicate schedule requirements, shipped cumulatives are updated by you. Cumulative data is synchronized based on an order based or receipt based cumulative model. For more information, refer to *To synchronize CUMs based on cumulative model (p. 121)*.

- **Based on external component data**
  If an external component communicates schedule requirements to LN, shipped cumulatives can be updated by the external component. In this case, cumulatives are synchronized with the cumulative data received from the external component. For more information, refer to *To synchronize CUMs based on external component data (p. 125)*.

Using sales schedule cumulatives

In the sales schedule procedure, cumulatives are used:

- To keep track of total cumulated quantities.
- To check and adjust the sales schedules for under-delivery and over-delivery. For more information, refer to *Adjusting sales schedules (p. 129)*.
- To monitor whether your business partner's received CUM matches with your shipped CUM. If not, disputes are generated that must be solved. For more information, refer to *Reconciling sales schedules (p. 136)*.

Note

- Referenced sales schedules, material releases, pick-up sheets, and delivery contracts are not checked or adjusted for under-delivery or over-delivery.
- If you synchronize sales schedule cumulatives based on external component data, you can still execute the adjustment functionality. However, this is not logical, because schedule adjustment is probably also handled by the external component.
- If you synchronize CUMs based on external component data, the sales schedule reconciliation functionality is not applicable.

To synchronize CUMs based on cumulative model

If both customers and suppliers use LN to communicate schedule requirements, cumulatives are synchronized based on an order based or receipt based cumulative model, which you can define in the **CUM Model used** field of the Items - Sales Business Partner (tdisa0510m000) and/or the Sales Contract Line Logistic Data (tdsls3102m000) session.

For more information on how to use these models, refer to *Adjusting sales schedules (p. 129)*.

Note

If the sales schedule is based on a sales contract with a linked terms and conditions agreement and if, in the Schedule Terms and Conditions (tctrm1131m000) session, the **Synchronize Cums** check box is selected, cumulatives are synchronized and reset based on the cumulative data received from the external component. For more information, refer to *To synchronize CUMs based on external component data (p. 125)*.

To reset cumulatives

Over time, the cumulatives can be incremented to very high values. To reduce these values, you can reset the cumulatives in the Reset Cumulatives (tdsls3230m000) session. Although this reset is usually

performed at the end of the year, the CUMs cannot be reset exactly when the year is changing. As a result, updates can be stored in the cumulative sessions after the reset date. By calculating a reset quantity, these values are also included in the reset process.

To reset the cumulatives successfully, the following conditions must be fulfilled:

- Suppliers and customers must use the same CUM reset date when resetting the cumulatives in the Reset Cumulatives (tdsls3230m000) session and the Reset Cumulatives (tdpur3230m000) session.
- Resetting can only take place when the releases sent by the customer, are received and approved by the supplier. If not, suppliers cannot approve releases that are processed after the reset date, because the reset dates are different.
- Suppliers must not update incoming releases or manually create new releases, because resetting can then result in wrong quantities.

Note

- You cannot reset the sales schedule cumulatives for the sales schedule if a reconciliation record exists with the **Dispute** status and a **Transaction Date** before the CUM reset date. You can view sales schedule reconciliation records in the Sales Schedule Reconciliation (tdsls3131m000) session.
- The cumulatives as stored in the Sales Schedules (tdsls3111m000) session for a specific sales schedule revision, are never updated during the reset process. They are kept as history information.

To calculate the reset quantity

Step 1: To determine a reset quantity

If you reset cumulatives in the Reset Cumulatives (tdsls3230m000) session, LN first determines the reset quantity. LN retrieves the reset quantity from the last CUM record prior to the **CUM Reset Date** that you specified in the Reset Cumulatives (tdsls3230m000) session. Which quantity is the reset quantity depends on the **CUM Model used**.

If the **CUM Model used** is:

- **Order Based**, the **Prior Required CUM** is the reset quantity.
- **Receipt Based**, the **Received CUM** is the reset quantity.

Step 2: To create new cumulative records

LN creates a new:

- Shipped CUM record in the Shipped CUM (tdsls3532m000) session.
- Invoiced CUM record in the Invoiced CUM (tdsls3533m000) session.

For the new CUM records, the following applies:

- The **Cumulative Reset Date** is equal to the **CUM Reset Date** that you specified in the Reset Cumulatives (tdsls3230m000) session.
- The **Status** is **Reset**.

To reset the shipped CUM

For a new shipped CUM record, LN decreases the following quantities with the reset quantity:

- **Cumulative Shipped Quantity**.
- **Received CUM**.

If already shipped CUM records exist with transaction dates later than the **Cumulative Reset Date**, LN copies these records with the following adjustments:

- The **Cumulative Shipped Quantity** and **Received CUM** are also decreased with the reset quantity.
- The old **Cumulative Reset Date** is replaced with the new **Cumulative Reset Date**.

To reset the invoiced CUM

In case of a new invoiced CUM record, LN decreases the **Cumulative Invoiced Quantity** with the reset quantity.

If already invoiced CUM records exist with invoice dates later than the **Cumulative Reset Date**, LN copies these records with the following adjustments:

- The **Cumulative Invoiced Quantity** is also decreased with the reset quantity.
- The old **Cumulative Reset Date** is replaced with the new **Cumulative Reset Date**.

Example 1 - To reset the cumulatives for an Order Based CUM model

- Reset date = start week 3
- The schedule lines are generated before the reset takes place
- Schedule line 2 is received in week 3
- Schedule line 3 is received in week 5

Week	Line 1	Prior required CUM before reset	Line 2	Prior required CUM before reset	Line 3	Prior required CUM before reset	Prior required CUM after re-set
1	20	20	-	20	-	20	20
2	20	40	-	40	-	40	40
3	20	60	5	45	-	45	5

4	20	80	5	50	-	50	10
5	20	100	5	55	20	70	30
6	20	120	55	110	5	75	35
7	-	-	5	115	5	80	40
8	-	-	5	120	5	85	45
9	-	-	-	-	5	90	50
10	-	-	-	-	5	95	55

TOTALS	CUM line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	10

The reset date starts in week 3. Because of the **Order Based** CUM model, resetting is carried out based on the prior required cumulatives. At the end of week 2, the reset quantity is 40. As a result, all CUMs are updated by -40 from the CUM reset date (week 3) on.

Example 2 - To reset the cumulatives for a Receipt Based CUM model

Take the same data from the previous example, but also take into consideration the following data:

Week	Received qty.	Received CUM before reset	Received CUM after reset
1	10	10	10
2	25	35	35
3	20	55	20
4	-	55	20
5	5	60	25

The reset date starts in week 3. Because of the **Receipt Based** CUM model, resetting is done based on the received cumulatives. At the end of week 2, the reset quantity is 35. As a result, all CUMs are updated by -35 from the CUM reset date (week 3) on.

The totals from example 1 would then arrive at:

TOTALS	CUM line 1	CUM line 2	CUM line 3	CUMs after reset
Start CUM	0	40	50	15

To synchronize CUMs based on external component data

If an external component communicates schedule requirements to LN and you want the cumulatives to be synchronized and reset based on the cumulative data received from the external component, select the **Synchronize Cums** check box in the Schedule Terms and Conditions (tctrm1131m000) session.

Note

If the **Synchronize Cums** check box is cleared, cumulatives are updated based on an order based or receipt based cumulative model, as defined in the **CUM Model used** field of the Sales Contract Line Logistic Data (tdsls3102m000) session. For more information, refer to *To synchronize CUMs based on cumulative model (p. 121)*.

To compare and synchronize cumulative data

If you have agreed to synchronize CUMs, the external component provides the **Cumulative Shipped Quantity** and **Last Shipment** when sending a new sales release line in the Sales Release Lines (tdsls3508m000) session. When the sales release is processed into a sales schedule (revision), your shipped cumulatives are compared and synchronized with the shipped cumulatives received from the external component.

Based on the following fields, the cumulative data is compared:

- **Cumulative Shipped Quantity**
- **Last Shipment**
- **Schedule**

Note

- If more than one shipped cumulative record is found with the same shipment number, the shipped CUM record with the latest **Transaction Date** is used for comparison.
- If no shipped cumulative record can be found for the sales release line's **Last Shipment**, LN warns that the cumulatives will not be synchronized, but that you can continue processing the sales release.

To synchronize shipped cumulatives

After a shipped cumulative record is found, the following can be applicable:

- The sales release line's **Cumulative Shipped Quantity** is equal to your **Cumulative Shipped Quantity**. Therefore, the shipped cumulative record is set to **Matched** in the Shipped CUM (tdsls3532m000) session. All preceding records with the **Created** status are updated to **Matched (no feedback)**.
- The sales release line's **Cumulative Shipped Quantity** is higher or lower than your **Cumulative Shipped Quantity**. Therefore, your shipped CUM is adjusted with a correction value to equal the external component's shipped CUM. This shipped cumulative record receives the **Synchronize** status. All preceding records with the **Created** status are updated to **Matched**.

Example

Sales Release Lines (tdsls3508m000)			Shipped CUM (tdsls3532m000)						
Shipped CUM	**Schedule**	**Shipment**	**Shipped CUM**	**Schedule**	**Shipment**	**Transaction date**	**Status**	**Shipped quantity**	**New shipped CUM**
-	DJ0001	-	10	DJ0001	XXX-1	1 April	Matched	10	10
20	DJ0001	YYY-2	15	DJ0001	YYY-2	1 May	Matched	5	15
-	DJ0001	-	-	DJ0001	YYY-2	Current date	Synchronize	5	20
-	DJ0001	-	25	DJ0001	ZZZ-3	1 June	Created	10	30
-	DJ0001	-	50	DJ0001	VVV-4	1 July	Created	25	55

For the cumulative record with the **Synchronize** status, the following is applicable:

- Correction value = Sales Release Lines (tdsls3508m000) session's shipped CUM – Shipped CUM (tdsls3532m000) session's shipped CUM.
- Shipped quantity = correction value.
- New shipped CUM = old shipped CUM + correction value.

To reset cumulatives

After a shipped cumulative record is found, the **Customer CUMs Reset Date** from the Sales Release Lines (tdsls3508m000) session can differ from the **Cumulative Reset Date** in the Shipped CUM (tdsls3532m000) session.

The following can be applicable:

- The sales release line's **Customer CUMs Reset Date** is earlier than your **Cumulative Reset Date**. LN warns that the cumulatives will not be reset, but that you can continue processing the sales release.
- The sales release line's **Customer CUMs Reset Date** is later than your **Cumulative Reset Date**.
  In this case, sales schedule cumulatives are reset in the following sessions:
  - Shipped CUM (tdsls3532m000)
  - Invoiced CUM (tdsls3533m000)
  - FAB/RAW Authorizations (tdsls3134m000)

  These cumulative records receive the **Reset** status.

Note

Based on the **Transaction Date** in the Shipped CUM (tdsls3532m000) session, LN determines the applicable invoiced cumulative record and authorization record.

To calculate the reset quantity

Before cumulatives can be reset, a reset quantity must be calculated.

This quantity is calculated as follows:

Cumulative Shipped Quantity from Shipped CUM (tdsls3532m000) - **Cumulative Shipped Quantity** from Sales Release Lines (tdsls3508m000)

Example

Sales Release Lines (tdsls3508m000)

Schedule	YYYYY1
Last Shipment	XXXXX1
Shipped CUM	80
Customer Reset Date	10/10/10

The current cumulatives are as follows:

Shipped CUM (tdsls3532m000)		**Invoiced CUM (tdsls3533m000)**		**FAB/RAW Authorizations (tdsls3134m000)**	
Schedule	YYYYY1	**Schedule**	YYYYY1	**Schedule**	YYYYY1
Last Shipment	XXXXX1	**-**	-	**FAB Authorization**	100
Shipped CUM	100	**Invoiced CUM**	100	**RAW Authorization**	100
Customer Reset Date	9/10/10	**Customer Reset Date**	9/10/10	**Customer Reset Date**	9/10/10
Transaction Date	15/11/10	**Transaction Date**	15/11/10	**Release Date**	15/11/10

After processing the sales release, the new cumulatives are as follows:

Shipped CUM (tdsls3532m000)		Invoiced CUM (tdsls3533m000)		FAB/RAW Authorizations (tdsls3134m000)	
Schedule	YYYYY1	**Schedule**	YYYYY1	**Schedule**	YYYYY1
Last Shipment	-	**-**	-	**-**	-
Shipped Quantity	-20	**Invoiced Quantity**	-20	**FAB Authorization**	80
Shipped CUM	80	**Invoiced CUM**	80	**RAW Authorization**	80
Customer Reset Date	10/10/10	**Customer Reset Date**	10/10/10	**Customer Reset Date**	10/10/10
Transaction Date	0	**Transaction Date**	0	**Transaction Date**	0
Status	Reset	**Status**	Reset	**-**	-

Note

You cannot manually reset cumulatives in the Reset Cumulatives (tdsls3230m000) session.

Adjusting sales schedules

Before a non-referenced sales schedule is approved, you can check the sales schedule for underdelivery and overdelivery.

Note

- Referenced sales schedules, material releases, pick-up sheets, and delivery contracts are not checked or adjusted for underdelivery or overdelivery.
- Sales schedule adjustment is an optional step in the sales schedule procedure.
- If you synchronize sales schedule cumulatives based on external component data, you can still execute the adjustment functionality. However, this is not logical, because schedule adjustment is probably also handled by the external component. For more information, refer to *To synchronize CUMs based on external component data (p. 125)*.

To adjust the incoming sales schedule requirements, execute one of the following:

- Run the Adjust Sales Schedules (tdsls3210m000) session.

- Run the Approve Sales Schedules (tdsls3211m000) session with the **Adjust** check box selected.

Note

If the sales schedule is based on a sales contract with a linked terms and conditions agreement and if, in the Schedule Terms and Conditions (tctrm1131m000) session, the **Activity Adjust Sales Schedules Applicable** and **Automatically Adjust Sales Schedules** check boxes are selected for the terms and conditions agreement, sales schedule adjustment is automatically executed.

The calculation that takes place to identify an underdelivery or an overdelivery depends on the CUM model that you use. This CUM model is specified in the **CUM Model used** field of the Items - Sales Business Partner (tdisa0510m000) and/or Sales Contract Line Logistic Data (tdsls3102m000) session.

The following CUM models are available:

- **Order Based**
- **Receipt Based**

Note

LN can only calculate an overdelivery or underdelivery if the **Cumulative Reset Date** is equal for all the sales schedule's cumulatives.

Order Based

If you have agreed with your business partner to use an **Order Based** CUM model, your business partner provides the **Prior Required CUM** when sending a new sales schedule requirement. Each time your business partner sends requirements, a new sales schedule revision number is created.

To determine an overdelivery or underdelivery for an **Order Based** CUM model, LN carries out the following calculation:

`Total Adjustment Quantity = **Cumulative Shipped Quantity** - prior required CUM.`

Note

You can view the **Cumulative Shipped Quantity** and the **Prior Required CUM** in the Sales Schedules (tdsls3111m000) session.

If the result of this calculation is negative, you have shipped less than your business partner required. As a result, LN creates a new sales schedule line for the total adjustment quantity. The **Requirement Type** of this sales schedule line is **Immediate**.

If the result of this calculation is positive, you have shipped more than your business partner required. Therefore, LN decreases the required quantity of the next sales schedule line with the total adjustment quantity. If the sales schedule line's required quantity is decreased, the sales schedule line receives the **Adjusted** status. If the total adjustment quantity is equal to or higher than the required quantity of the next sales schedule line, LN cancels this sales schedule line, which therefore gets the **Canceled** status. LN keeps on canceling sales schedule lines and adjusting sales schedule line requirements until the

total adjustment quantity is balanced. For more information on what happens with sales schedule lines that get a zero required quantity, refer to *Zero required quantity for sales schedule lines (p. 113)*.

Note

If the result of the calculation is positive, the result is first subtracted from overdelivered lines (if present) and then from not yet delivered lines.

Example

Next schedule issue date in Purchase Control: 18-09

Date	17-09	18-09	19-09	20-09	21-09
Line Number	1	-	-	2	3
Ordered	10	-	-	10	10
Received	10	-	-	10	0
Still needed	-	-	-	-	10

Because line number two is already received before the next schedule issue date, the quantity of 10 is put into inventory. Suppose the demand of 10 on 20-09 changes into a demand of 20 on 19-09, Enterprise Planning uses the 10 from inventory and adds another line with another 10:

Date	17-09	18-09	19-09	20-09	21-09
Line Number	1	-	4	2	3
Ordered	10	-	10	10	10
Received	10	-	0	10	0
Still needed	-	-	10	-	10

When Purchase Control communicates the quantities to Sales Control, the schedule line quantities that are delivered on or after the next issue date, and are therefore considered an overdelivery, are communicated in one line on the schedule issue date:

Date	17-09	18-09	19-09	20-09	21-09
Ordered	-	10	10	-	10

If in Sales Control, the total shipped quantity is 20, LN carries out the following calculation:

`Total shipped CUM (20) - Prior required CUM (10) = 10.`

Sales Control adjusts the overdelivery as follows:

Date	17-09	18-09	19-09	20-09	21-09
Ordered	-	-	10	-	10

The required quantity of the first sales schedule line is adjusted, which was the delivered line from Purchase Control.

Receipt Based

If you have agreed with your business partner to use a **Receipt Based** CUM model, your business partner provides the **Received CUM** when sending a new requirement on the sales schedule. The **Received CUM** contains the sum of all quantities that your business partner previously received on the sales schedule. Each time your business partner sends requirements, a new sales schedule revision number is created.

To be able to determine an overdelivery or underdelivery for a **Receipt Based** CUM model, LN carries out the following calculation:

`Total Adjustment Quantity = **Cumulative Shipped Quantity** - **Received CUM**.`

Note

You can view the **Cumulative Shipped Quantity** and the **Received CUM** in the Sales Schedules (tdsls3111m000) session.

If the result of this calculation is positive, you have shipped more than your business partner received. As a result, LN assumes that the difference between the **Cumulative Shipped Quantity** and the **Received CUM** is in transit. Therefore, LN decreases the required quantity of the next sales schedule line with the total adjustment quantity. If the sales schedule line's required quantity is decreased, the sales schedule line receives the **Adjusted** status. If the total adjustment quantity is equal to or higher than the required quantity of the next sales schedule line, LN cancels this sales schedule line, which therefore gets the **Canceled** status. LN keeps on canceling sales schedule lines and adjusting sales schedule line requirements until the total adjustment quantity is balanced. For more information on what

happens with sales schedule lines that get a zero required quantity, refer to *Zero required quantity for sales schedule lines (p. 113)*.

If the result of this calculation is negative, you have shipped less than your business partner received. In this case, LN does not adjust sales schedule lines, but adds a warning message on the report. The reason for this is that in a **Receipt Based** CUM model, your business partner is responsible for solving the difference (see also: *Purchase schedule cumulatives (p. 52)*). In this case, you can decide to create a **Correction** record in the Sales Schedule Invoice Lines (tdsls3140m200) session. For more information on invoice corrections, refer to *Sales schedules and Invoicing (p. 149)*.

After LN has carried out the adjustment process and the adjusted and newly created sales schedule lines are not yet approved, you can approve them in the Approve Sales Schedules (tdsls3211m000) session.

Approving sales schedules

Sales schedules with the **Created** or **Adjusted** status must be approved before they can be processed. After approval, the sales schedule has the **Approved** status. It depends on the type of schedule how you can approve sales schedules.

Approving referenced schedules

If the sales schedule is a referenced schedule, the sales schedule line can be automatically or manually approved.

Automatic approval

Select the **Automatically Approve Referenced Sales Schedules** check box in the following sessions:

1. **Schedule Terms and Conditions (tctrm1131m000)**
   This session is checked if the sales schedule is based on a sales contract with a linked terms and conditions agreement.
2. **Sales Contract Line Logistic Data (tdsls3102m000)**
   This session is checked if the sales schedule is based on a sales contract.
3. **Items - Sales Business Partner (tdisa0510m000)**
   This session is checked if the sales schedule is based on item and sales business partner information.

Note

- The **Use Contracts for Schedules** check box in the Sales Contract Parameters (tdsls0100s300) session determines whether the sales schedule must be linked to a sales contract.
- LN immediately approves each referenced sales schedule line separately when it is created.

Manual approval

If the **Automatically Approve Referenced Sales Schedules** check box is cleared, you can approve a referenced sales schedule:

- By sales schedule header, in the Approve Sales Schedules (tdsls3211m000) session, or from the appropriate menu of the Sales Schedules (tdsls3111m000) session.
- By pick-up sheet, in the Approve Pick-up Sheets (tdsls3211m200) session, or from the appropriate menu of the Pick-up Sheets (tdsls3107m100) session.
- By sales schedule line, from the appropriate menu of the Sales Schedule Lines (tdsls3107m000) session. In this case, you can approve a referenced schedule, reference by reference.

For more information on referenced sales schedules, refer to *Referenced sales schedules (p. 104)*.

Approving non-referenced schedules

If the sales schedule is a non-referenced schedule, the sales schedule line can be automatically or manually approved.

- **Automatic approval**
  If the sales schedule is based on a sales contract with a linked terms and conditions agreement and if, in the Schedule Terms and Conditions (tctrm1131m000) session, the **Automatically Approve Non-referenced Sales Schedules** check box is selected for the terms and conditions agreement, sales schedule approval is automatically executed.
- **Manual approval**
  By sales schedule header, in the Approve Sales Schedules (tdsls3211m000) session.
- From the appropriate menu of the Sales Schedules (tdsls3111m000) session.

For non-referenced sales schedules, during the approval process:

- You can optionally check and adjust the sales schedules for underdelivery and overdelivery.
- Sales schedules can be reconciled. Reconciling means checking whether your business partner's **Received CUM** matches with your **Cumulative Shipped Quantity**. If the CUMs do not match, disputes are generated that must be solved.

For more information on:

- Adjusting sales schedules, refer to *Adjusting sales schedules (p. 129)*.
- Reconciling sales schedules, refer to *Reconciling sales schedules (p. 136)*.

Approval process

The requirement on the sales schedule line determines the actions LN takes when you approve a sales schedule.

Immediate or Firm

If you approve a sales schedule line and the **Requirement Type** is **Immediate** or **Firm**:

- LN creates planned inventory transactions in the Planned Inventory Transactions (whinp1500m000) session.
- LN updates the available-to-promise in the Item Master Plan (cprmp2101m000) session. For more information on updating the ATP, refer to *Sales schedules and Enterprise Planning (p. 139)*.
- And the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session, a planned warehouse order is automatically generated or updated. For more information, refer to *Planned warehouse orders (p. 85)*.
- And no price is entered in the Sales Schedule Lines (tdsls3107m000) session, LN searches for a sales contract to be linked to the sales schedule line. If an **Active** normal contract is available for the item, sold-to BP, ship-to BP, and sales office combination, LN links this sales contract to the sales schedule line and uses the sales contract prices and discounts for the sales schedule. If no sales contract can be linked, LN uses the prices and discounts as specified in the Pricing module. To retrieve the correct price at the right moment, LN uses the **Start Date** from the Sales Schedule Lines (tdsls3107m000) session. If no price is specified in Pricing, LN retrieves the price from the Items - Sales (tdisa0501m000) session.
- LN updates the sales contract line's **Called Quantity** if a sales contract is linked to the sales schedule line.
- LN creates history for the sales schedule and sales schedule lines, which you can view in the Sales Order/Schedule History (tdsls5505m000) session.
- LN updates Quality on what is expected to be inspected.
- And a sales schedule reconciliation record with the **Dispute** status exists for that sales schedule in the Sales Schedule Reconciliation (tdsls3131m000) session, LN prints a warning message on the approval report. For more information on handling shipped CUM records with the **Dispute** status, refer to *Reconciling sales schedules (p. 136)*.
- LN updates the business partner's open balance, which you can view in the Sales Schedule Lines (tdsls3107m000) session.

Planned

If you approve a sales schedule line and the **Requirement Type** is **Planned**:

- LN updates the available-to-promise in the Item Master Plan (cprmp2101m000) session. For more information on updating the ATP, refer to *Sales schedules and Enterprise Planning (p. 139)*.
- LN updates the **Unconfirmed Customer Orders** quantity in the Item Master Plan (cprmp2101m000) session.
- LN creates FAB/RAW authorizations in the FAB/RAW Authorizations (tdsls3134m000) session.
- And a sales schedule reconciliation record with the **Dispute** status exists for that sales schedule in the Sales Schedule Reconciliation (tdsls3131m000) session, LN prints a warning message on the approval report.

Note

- You can undo the approval of the sales schedule. If you do so, the results of the approval process are deleted and the sales schedule's status is set to **Created**. To undo the approval of the last sales schedule revision, on the appropriate menu of the Sales Schedules (tdsls3111m000) session, click **Restore Schedule**. However, you cannot use this functionality if you use planned warehouse orders.
- If the **Use Confirmation** check box is selected in the Sold-to Business Partner (tccom4110s000) session, you cannot approve sales schedules before the **Confirmed Quantity** and **Confirmation Date** fields are filled on the sales schedule line(s).

Reconciling sales schedules

Material releases and shipping schedules with non-referenced items can be reconciled, which means that your business partner's **Received CUM** is matched with your **Cumulative Shipped Quantity**. If the cumulatives (CUMs) do not match, disputes are generated that you must resolve.

Important!

- In the Items - Sales Business Partner (tdisa0510m000) or Sales Contract Line Logistic Data (tdsls3102m000) session, the **Consider Planned/Actual Delivery Date during Reconciliation** check box determines how the **Cumulative Shipped Quantity** is calculated in the Sales Schedule Reconciliation (tdsls3131m000) and Shipped CUM (tdsls3532m000) sessions.
- If the sales schedule is based on a sales contract with a linked terms and conditions agreement:
  - And the **Synchronize Cums** check box is selected in the Schedule Terms and Conditions (tctrm1131m000) session, you cannot reconcile sales schedules.
  - You can specify how the last shipment is determined for calculating received cumulatives in the **Method of Last Shipment ID determination** field of the Schedule Terms and Conditions (tctrm1131m000) session.

To insert reconciliation records

When you confirm a shipment for a sales schedule, LN creates a sales schedule reconciliation record in the Sales Schedule Reconciliation (tdsls3131m000) session with the following information:

- The date on which the items are shipped.
- The number of the shipment with which the goods are shipped.
- The quantity that you shipped with that specific shipment.
- The last quantity that is received for the sales schedule.
- The total cumulated quantity that you already shipped for the sales schedule.

For each shipment, one reconciliation record is created with the **Created** status.

When you approve a sales schedule, LN:

1. Inserts the number of the last shipment that your business partner received for the sales schedule in the Sales Schedule Reconciliation (tdsls3131m000) session.

2. Inserts the last quantity that your business partner received for the sales schedule in the Sales Schedule Reconciliation (tdsls3131m000) session.
3. Calculates the new **Received CUM** by adding the **Last Receipt Quantity** to the **Received CUM** of the concerned and next reconciliation records.
4. Compares the business partner's **Received CUM** with your **Cumulative Shipped Quantity**. If these CUMs are equal, the reconciliation record receives the **Matched** status. If these CUMs are unequal, the reconciliation record receives the **Dispute** status.

Note

When you approve a sales schedule for which a reconciliation record with the **Dispute** status exists, a warning message is printed on the approval report. For more information on approving sales schedules, refer to *Approving sales schedules (p. 133)*.

Reconciliation statuses

A reconciliation record can have the following statuses:

- **Created**
  The sales schedule reconciliation record is created and you have not yet received your business partner's received CUM and last receipt quantity for the concerned shipment.
- **Matched**
  You received your business partner's received CUM and last receipt quantity for the concerned shipment and these quantities are equal to your shipped CUM and shipped quantity.
- The shipped CUM and CUM reset date that you received from an external component are equal to your shipped CUM and CUM reset date.
- If a shipped cumulative record has the **Synchronize** status, the previous record is set to **Matched**.
- **Dispute**
  You received your business partner's received CUM and last receipt quantity for the concerned shipment and these quantities are unequal to your shipped CUM and shipped quantity.
- **Reconciled**
  You discussed the difference between your business partner's received CUM and your shipped CUM, and as a result you have adjusted the received CUM to equal the shipped CUM.
- **Adjusted**
  You discussed the difference between your business partner's received CUM and your shipped CUM, and as a result you have adjusted the shipped CUM to equal the received CUM.
- **Adjusted and Reconciled**
  You discussed the difference between your business partner's received CUM and your shipped CUM, and as a result you have adjusted the shipped CUM and the received CUM.
- **Matched (forced)**
  The received CUM and last receipt quantity that you received from your business partner for the concerned shipment are unequal to your shipped CUM and shipped quantity, but a later entry has already received the status **Matched**.

- If a sales schedule reconciliation record has the status **Dispute**, and its shipped CUM is updated as a result of adjusting previous records with the **Dispute** status, the current record is set to **Matched (forced)** if, after correction, quantities match.
- **Matched (no feedback)**
  You have not yet received your business partner's received CUM and last receipt quantity for the concerned shipment, but a later entry has already received the status **Matched** or **Reconciled**. The received CUM and last receipt quantity remain zero.
- You have not yet received an external component's shipped CUM for the concerned shipment, but a later entry has already received the status **Matched**.
- **Synchronize**
  The shipped CUM that you received from an external component is unequal to your shipped CUM , and as a result your shipped CUM is adjusted with a correction value to equal the external component's shipped CUM.
- **Reset**
  The sales schedule cumulative record or the sales schedule authorization record are reset in the Reset Cumulatives (tdsls3230m000) session.
- The CUM reset date that you received from an external component is later than your CUM reset date, and as a result the sales schedule cumulative record or sales schedule authorization record are reset.

To solve disputes

You can use the Sales Schedule Reconciliation (tdsls3131m000) session to solve disputes between your shipped cumulatives and your sold-to business partner's received cumulatives for a specific sales schedule. Only if a reconciliation record has the **Dispute** status, you can adjust the record.

To handle sales schedule reconciliation records with the **Dispute** status, select one of the following on the appropriate menu of the Sales Schedule Reconciliation (tdsls3131m000) session:

- **Reconcile Received CUMs**
  LN adjusts the **Received CUM** to equal the **Cumulative Shipped Quantity**. The reconciliation record gets the **Reconciled** status.
- **Adjust Shipped CUMs**
  LN adjusts the **Cumulative Shipped Quantity** to equal the **Received CUM**. The sales schedule reconciliation record gets the **Adjusted** status.
- **Adjust and Reconcile**
  The Enter new CUMs (tdsls3131s000) session starts in which you can specify the quantity that must replace the current **Received CUM** and **Cumulative Shipped Quantity**. The sales schedule reconciliation record gets the **Adjusted and Reconciled** status.

Note

If a record obtains the **Dispute** status because the quantity shipped is more than the quantity that you reported shipped, you must record an extra quantity shipped in Warehousing instead of choosing **Adjust Shipped CUMs**, or **Adjust and Reconcile**. The reason for this is that if you adjust the shipped CUM, no invoice is raised for the additionally shipped goods.

When the dispute is solved:

- All previous records with the **Dispute** status receive the **Matched (forced)** status. Previous records with the **Created** status receive the **Matched (no feedback)** status.
- LN adjusts the **Cumulative Shipped Quantity** of the following records according to the adjustment. The **Received CUM** of successive records is not updated.
- For records with the **Adjusted** or **Adjusted and Reconciled** status, LN redetermines the status of the following records based on the new **Cumulative Shipped Quantity**. If, after adjustment, the **Cumulative Shipped Quantity** of a record with the **Dispute** status turns out to be correct, the sales schedule reconciliation record's status changes from **Dispute** into **Matched (forced)**.
- And you have chosen to adjust the received CUM, your sold-to business partner must also adjust the received CUM. For invoiced purchase schedule lines, the received CUM can be updated in the Update Received CUMs (tdpur3432m000) session. If the received CUM is not updated on the purchase side as well, each time the purchase schedule is sent, it will cause a dispute.
- The shipped CUM records in the Shipped CUM (tdsls3532m000) session are updated according to the adjustments you made in the Sales Schedule Reconciliation (tdsls3131m000) session.

Loss of inventory

If as a result of the discussion with your business partner on a reconciliation record with the **Dispute** status is decided to adjust the **Cumulative Shipped Quantity**, you can also agree with your business partner on who will pay for the loss of inventory.

The following possibilities exist:

- You pay for the loss of inventory. In this case, you must create a **Correction** record in the Sales Schedule Invoice Lines (tdsls3140m200) session. This will result in a credit invoice to your business partner.
- Your business partner pays for the loss of inventory. In this case, you must not create a **Correction** record in the Sales Schedule Invoice Lines (tdsls3140m200) session.

Note

You can also check whether you must create an invoice correction in the Sales Schedule Invoice Lines (tdsls3140m200) session by comparing the **Cumulative Invoiced Quantity** from the Invoiced CUM (tdsls3533m000) session with the **Received CUM** after reconciliation. As a result, you can view whether you invoiced your customer too much or too little compared to the receipts.

For more information on shipment corrections and sales schedule invoices, refer to *Sales schedules and Invoicing (p. 149)*.

Sales schedules and Enterprise Planning

When a sales schedule is approved, planned requirements are calculated and planned supply is generated in Enterprise Planning based on the sales schedule's planned and firm requirements.

Enterprise Planning handles sales schedules as normal sales orders.

To handle sales schedule requirements in Enterprise Planning

After a sales schedule is approved, it depends on the type of schedule how Enterprise Planning handles the sales requirements.

Shipping schedules and sequence shipping schedules

If you approve a **Shipping Schedule** or **Sequence Shipping Schedule**, LN stores the sales requirements in:

- The Planned Inventory Transactions (whinp1500m000) session as a planned inventory transaction of type **Sales Schedule**.
- The Item Master Plan (cprmp2101m000) session as a customer order.
- The Item Order Plan (cprrp0520m000) session as an order of type **Sales Schedule**.

Material releases

If you approve a **Material Release**:

- **Item Master Plan (cprmp2101m000)**
  LN stores the sales requirements for the related item in the **Unconfirmed Customer Orders** field.
- **Item Order Plan (cprrp0520m000)**
  The requirements are shown as an order of type **Sales Schedule**

Customer orders for the item represent normal sales orders plus the schedule requirements in the material release that have the **Requirement Type** set to **Firm**. In Enterprise Planning, customer orders are added to the demand for the item and consumed from the forecast. Sales requirements that originate from a **Material Release** end up as unconfirmed customer orders in the item master plan. These requirements do not affect the planning in Enterprise Planning and are only displayed to show which part of the customer orders is not yet confirmed.

In the Item Order Plan (cprrp0520m000) session, you can view the sales requirements of a **Material Release** as sales schedule forecast.

Master planning and order planning

When you update or simulate the master plan or the order plan, LN takes into account the required quantities of sales schedules.

LN retrieves:

- The planned quantities for a **Shipping Schedule** or **Sequence Shipping Schedule** from the Planned Inventory Transactions (whinp1500m000) session.
- The quantities for a **Material Release** from the Sales Schedule Lines (tdsls3107m000) session.

Change of quantity and dates

If order quantities or (delivery) dates of a sales schedule change, and the **Online ATP Update in EP** check box is selected in the Planning Parameters (cprpd0100m000) session, Enterprise Planning performs an ATP update for the item. This update is similar to the ATP update that Enterprise Planning carries out if anything changes in planned receipts or planned issues in the Planned Inventory Transactions (whinp1500m000) session.

In case of changes, Enterprise Planning also sets the net change date in the Items - Planning (cprpd1100m000) session, so changes are taken into account during a planning run.

To retrieve required quantities for a plan period

A **Shipping Schedule** or **Sequence Shipping Schedule** can end in the middle of a plan period. As a result, an overlap exists between the **Shipping Schedule** or **Sequence Shipping Schedule** and the **Material Release** in that specific plan period.

For this reason, LN distinguishes between a **Material Release** that overlaps a **Shipping Schedule** or **Sequence Shipping Schedule**, and a **Material Release** that does not.

To determine planned quantities for a material release that does not overlap a (sequence) shipping schedule

For a **Material Release** that does not overlap a **Shipping Schedule** or **Sequence Shipping Schedule** in a plan period, LN retrieves the total required quantity for the plan period from the Sales Schedule Lines (tdsls3107m000) session.

LN uses the following parameters from the Sales Contract Line Logistic Data (tdsls3102m000) or the Items - Sales Business Partner (tdisa0510m000) session to determine whether or not the planned requirements are accumulated:

- **Distribute Planned Requirements**
- **Accumulate Demand On Start Date Of The Period**

Note

If the **Distribute Planned Requirements** is cleared, the **Accumulate Demand On Start Date Of The Period** is always selected.

Examples

Example 1

The **Distribute Planned Requirements** check box and the **Accumulate Demand On Start Date Of The Period** check box are both selected.

Day	1	2	3	4	5
MRL001	50	-	-	-	-
SHP001 / SEQ001	-	-	-	-	-
Planning, sales schedule forecast	50	-	-	-	-

The first day is filled with the total quantity of the material release, because the **Accumulate Demand On Start Date Of The Period** check box is selected.

Example 2

The **Distribute Planned Requirements** check box is selected and the **Accumulate Demand On Start Date Of The Period** check box is cleared.

Day	1	2	3	4	5
MRL001	50	-	-	-	-
SHP001 / SEQ001	-	-	-	-	-
Planning, sales schedule forecast	10	10	10	10	10

The total quantity of the material release, which must not be accumulated, is divided over the five calendar days in the plan period.

To determine planned quantities for a material release that overlaps a (sequence) shipping schedule

For a **Material Release** that overlaps a **Shipping Schedule** or **Sequence Shipping Schedule** in a plan period, LN uses the following parameters from the Sales Contract Line Logistic Data (tdsls3102m000) or the Items - Sales Business Partner (tdisa0510m000) session to determine how to calculate and distribute the planned requirements:

- **Nett Planned Requirements**
- **Linear Estimate**
- **Distribute Planned Requirements**

Note

If the **Nett Planned Requirements** check box is cleared, the **Linear Estimate** check box is also cleared and disabled.

Examples

Example 1

The **Nett Planned Requirements** check box is cleared and the **Distribute Planned Requirements** check box is selected.

Day	1	2	3	4	5
MRL001	50	-	-	-	-
SHP001 / SEQ001	20	10	-	-	-
Planning, sales schedule	20	10	-	-	-
Planning, sales schedule forecast	10	10	10	10	10

Because the **Nett Planned Requirements** is cleared, planned quantities can be entered for all days in the period, including the days that are filled by the shipping schedule (day 1 and 2).

Because the **Distribute Planned Requirements** is selected, LN equally spreads the total quantity of the material release over the number of days in the period.

Example 2

The **Nett Planned Requirements**, **Linear Estimate**, and **Distribute Planned Requirements** check boxes are all selected.

-	Week 1					Week 2					Week 3				
Day	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
MRL001	-	-	50	-	-	-	-	50	-	-	-	-	50	-	-
SHP001 / SEQ001	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Planning, sales schedule	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Planning, sales schedule forecast	-	-	-	-	-	-	-	10	10	10	10	10	10	10	10

- **Week 1**
  A material release exists, but the entire period is filled by the shipping schedule. As a result, Enterprise Planning only takes into account the shipping schedule.
- **Week 2**
  An overlap exists between the material release and the shipping schedule.
- Because the **Nett Planned Requirements** is selected, planned quantities are only applicable for the days that are not filled by the shipping schedule (day 3, 4, and 5).
- Because the **Linear Estimate** check box is selected, LN divides the quantity of the material release by the number of days in the plan period (50/5 = 10) and then determines the planned requirements for the non-overlapping period (10 * 3 = 30).
- Because the **Distribute Planned Requirements** is selected, the days that are not filled by the shipping schedule, receive the calculated quantity of 10 (30/3).
- **Week 3**
  Only a material release exists and Enterprise Planning takes into account the related quantity.
- Because the **Distribute Planned Requirements** is selected, LN equally spreads the total quantity of the material release over the number of days in the period.

Example 3

The **Nett Planned Requirements** check box is selected and the **Linear Estimate** and **Distribute Planned Requirements** check boxes are cleared.

-	Week 1					Week 2					Week 3				
Day	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
MRL001	-	-	50	-	-	-	-	50	-	-	-	-	50	-	-
SHP001 / SEQ001	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Planning, sales schedule	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Planning, sales schedule forecast	-	-	-	-	-	-	-	29	-	-	50	-	-	-	-

- **Week 2**
  Because the **Linear Estimate** check box is cleared, LN distributes the material release in week 2 without linear estimate. This means that LN subtracts the shipping schedule quantity from the total material release quantity for the period (50 - 21 = 29).
- Because the **Distribute Planned Requirements** check box is cleared, the first day of week 2 that has no shipping schedule quantity, is filled with the remaining quantity of the material release.
- **Week 3**
  The first day of week 3 is filled with the total quantity of the material release, because the **Distribute Planned Requirements** check box is cleared.

Example 4

This example shows what happens if the quantity of the material release changes from 50 to 60. In this example, the **Nett Planned Requirements** and **Distribute Planned Requirements** check boxes are selected and the **Linear Estimate** check box is cleared.

-	Week 1					Week 2					Week 3				
Day	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
MRL001	-	-	50	-	-	-	50	–>	60	-	-	-	50	-	-
SHP001 / SEQ001	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Update	-	-	-	-	-	-	-	+3	+3	+4	-	-	-	-	-
Planning, sales schedule	10	9	8	12	10	12	9	-	-	-	-	-	-	-	-
Planning, sales schedule forecast	-	-	-	-	-	-	-	13	13	13	10	10	10	10	10

Week 2

- Because the **Linear Estimate** check box is cleared, LN calculates the remaining quantity as follows: 60 - 12 - 9 = 39.
- Because the **Distribute Planned Requirements** check box is selected, LN equally spreads the remaining quantity of the material release over the number of days in the period.
- Because the **Nett Planned Requirements** is selected, planned quantities are only entered for the days that are not filled by the shipping schedule (day 3, 4, and 5).

Now that planned quantities are increased, Enterprise Planning decreases the ATP quantities for the item.

Example 5

This example shows what happens if the quantity of the shipping schedule changes from 9 to 15 on day 2 of week 2. In this example, the **Nett Planned Requirements** and **Distribute Planned Requirements** check boxes are selected and the **Linear Estimate** check box is cleared.

-	Week 1					Week 2					Week 3				
Day	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
MRL001	-	-	50	-	-	-	-	60	-	-	-	-	50	-	-
SHP001 / SEQ001	10	9	8	12	10	12	15	-	-	-	-	-	-	-	-
Update	-	-	-	-	-	-	+6	-2	-2	-2	-	-	-	-	-
Planning, sales schedule	10	9	8	12	10	12	15	-	-	-	-	-	-	-	-
Planning, sales schedule forecast	-	-	-	-	-	-	-	11	11	11	10	10	10	10	10

This change results in a change in the Planned Inventory Transactions (whinp1500m000) session. LN sends this change to Enterprise Planning for the ATP update.

Obviously, changes in the shipping schedule quantities also affect the material release for week 2.

Week 2

- Because the **Linear Estimate** check box is cleared, LN calculates the remaining quantity as follows: 60 - 12 - 15 = 33.
- Because the **Distribute Planned Requirements** check box is selected, LN equally spreads the remaining quantity of the material release over the number of days in the period.
- Because the **Nett Planned Requirements** is selected, planned quantities are only entered for the days that are not filled by the shipping schedule (day 3, 4, and 5). On day 2, the firm quantity of 15 replaces the earlier received planned quantity.

Now that planned quantities are decreased, Enterprise Planning increases the ATP quantities for the item.

Sales schedules and Warehousing

After the ordered items on a sales schedule line are approved, you can ship them. To ship the items, you must release the sales schedule to Warehousing.

Note

One of the following must be released to Warehousing:

- Approved sales schedule lines with the **Requirement Type** set to **Immediate** or **Firm**.
- Planned warehouse orders, which are generated for approved sales schedule lines if the **Use Contracts for Schedules** check box is selected in the Sales Contract Parameters (tdsls0100s300) session.

Releasing sales schedules and planned warehouse orders to Warehousing

If the sales schedule is based on a sales contract with a linked terms and conditions agreement, the sales schedule or planned warehouse order is automatically released to Warehousing if, in the Schedule Terms and Conditions (tctrm1131m000) session, the following check boxes are selected:

- **Automatically Release Referenced Sales Schedules to Order**
- **Automatically Release Non-referenced Sales Schedules to Order**
- **Automatically Release Backorders for Referenced Schedules**
- **Automatically Release Backorders for Non-Referenced Schedules**

If these check boxes are cleared, you must use the Release Sales Schedules to Order (tdsls3207m000) or Release Pick-up Sheets to Warehousing (tdsls3207m100) session to release the sales schedule, pick-up sheet, or planned warehouse order to Warehousing.

If a sales schedule (line) or planned warehouse order is released to Warehousing, LN creates a warehousing order for the sales schedule/planned warehouse order and creates outbound order lines for the sales schedule lines/planned warehouse orders. When an outbound order line is created for a sales schedule line, the sales schedule line receives the **Order Generated** status. When an outbound order line is created for a planned warehouse order, the planned warehouse order receives the **Released to Warehousing** status.

Note

LN carries out the outbound procedure and shipment procedure as specified for the warehousing order type that is linked to the warehousing order.

Releasing sequence shipping schedules to Warehousing

If a sales schedule line of the **Sequence Shipping Schedule** type is created, sequence shipping information is created in the Sequence Shipping Information (tdsls3517m000) session. In this session, LN keeps track of the sequence shipping information revisions.

After the sales schedule line is released to Warehousing, LN also creates sequence shipping data in the Shipping Sequence (whinh4520m000) session of Warehouse Management. In this session, only the latest revision of the shipping sequence information is filed.

The shipping sequence information informs you about the sequence in which your ship-to business partner needs the items on the assembly line. Therefore, you must ship the goods in the sequence that is specified in the Shipping Sequence (whinh4520m000) session. The shipping sequence data is used

to create shipments and shipment lines. LN creates a shipment for each shipment reference. Each shipping sequence results in a shipment line.

Shipping for sales schedules

If, in Warehousing, items are shipped for a sales schedule line, LN assigns one of the following statuses to the sales schedule line and planned warehouse order:

- **Sales schedule line**
  - **Partially Shipped**
    A part of the ordered quantity is shipped. If planned warehouse orders are used, this status is not applicable for the sales schedule line.
  - **Goods Delivered**
    The entire ordered quantity is shipped.
- **Planned warehouse order**
  - **Partially Delivered**
    The first shipment line is confirmed in Warehousing for this warehouse order. Other lines are still to be confirmed.
  - **Finalized**
    The last shipment is confirmed in Warehousing for this warehouse order or the shipment process is finished without an actual shipment, for example when a warehouse order is canceled.

If items are shipped for a sales schedule line, LN:

- Updates the total quantity shipped for the sales schedule in the Shipped CUM (tdsls3532m000) session and the Sales Schedules (tdsls3111m000) session.
- Creates an actual delivery line with the **Goods Delivered** status in the Sales Schedule Actual Delivery Lines (tdsls3140m000) session.
- Updates the **Last Shipment**, **Last Delivery Date**, and the **Delivered Quantity** in the Sales Schedule Lines (tdsls3107m000) session.

Note

If not the entire ordered quantity is shipped and the sales schedule is terminated, the sales schedule line receives the **Goods Delivered** status. As a result, the remaining ordered quantity that is not shipped can no longer be shipped. For more information on terminating sales schedules, refer to *Terminating sales schedules (p. 153)*.

Sales schedules and Invoicing

After the ordered items on a sales schedule line are partially or fully delivered, you can invoice the delivered goods. To send the invoice, you must release the sales schedule to Invoicing.

Actual deliveries, invoice lines, and invoice corrections

To be able to invoice (partial) shipments, LN files actual deliveries in the Sales Schedule Actual Delivery Lines (tdsls3140m000) and Sales Schedule Actual Delivery Lines (tdsls3140m100) sessions.

You can use the Sales Schedule Invoice Lines (tdsls3140m200) to invoice and correct delivered quantities.

Note

Actual delivery lines can also be considered as invoice lines.

Actual delivery

In the Sales Schedule Actual Delivery Lines (tdsls3140m000) and Sales Schedule Actual Delivery Lines (tdsls3140m100) sessions, LN files all deliveries that take place for a sales schedule line or planned warehouse order. When a sales schedule line's or planned warehouse order's ordered quantity is (partially) delivered, LN creates an actual delivery line with the **Goods Delivered** status for the delivered quantity. Invoicing of delivered items takes place based on the actual delivery details that are specified in these sessions. This setup enables you to invoice partial deliveries as well.

An actual delivery line goes through the following statuses:

1. **Goods Delivered**
2. **Released to Invoicing**
3. **Invoiced**
4. **Processed**

Invoice correction

You can use the Sales Schedule Invoice Lines (tdsls3140m200) session to correct delivered quantities. These corrections take place for financial, not logistic reasons. If, for example, shipped items are lost during shipment and you do not want to invoice your business partner for these lost items, you can reduce the delivered quantity. To do so, select an invoice line and, from the appropriate menu, choose **Enter Invoice Correction**. As a result, you can specify the **Correction Quantity** in the details session. The **Shipment Type** is set to **Correction** for the correction record.

You can create invoice corrections for sales schedule lines with a status other than **Processed**.

An invoice correction record goes through the following statuses:

1. **Created**
2. **Released to Invoicing**
3. **Invoiced**
4. **Processed**

Note

You must confirm an invoice correction record with the **Created** status before it can be released to Invoicing. To confirm the invoice correction record, from the appropriate menu of the Sales Schedule Invoice Lines (tdsls3140m200) session, choose **Confirm Invoice Correction**.

If you confirm a correction record, LN:

- Creates a financial transaction of the **Shipment Variance** type in the Integration Transactions (tfgld4582m000) session.
- Decreases the business partner's open balance with the correction amount.
- Updates the sales contract data, if a sales contract is linked.
- Inserts a record in the sales schedule history.
- Does not update the shipped CUMs, because the shipment correction is only executed for financial reasons and not logistic.

Releasing invoice lines and invoice corrections to Invoicing

To release invoice lines and invoice corrections to Invoicing, from the appropriate menu of the Sales Schedule Invoice Lines (tdsls3140m200) session, choose **Release Sales Orders/Schedules to Invoicing**. As a result, the Release Sales Orders/Schedules to Invoicing (tdsls4247m000) session is started.

The following data in the following order is released to Invoicing:

1. Invoice lines with the **Goods Delivered** status.
2. Confirmed correction records with the **Created** status.

Note

- Releasing of invoice lines and then correction records is performed in sequence of sequence number (sequence of creation).
- If you release a sales schedule/planned warehouse order to Invoicing, the status of the actual delivery line, invoice line, and correction record is changed to **Released to Invoicing**.

If a sales schedule is released to Invoicing, LN determines the **Delivered Amount** as follows:

- **Invoice line**
  Delivered Quantity/ **Ordered Quantity** * **Net Amount**
- **Correction record**
  Correction Quantity/ **Delivered Quantity** of the invoice line * **Delivered Amount** of the invoice line.

Note

- LN retrieves the **Ordered Quantity** and **Net Amount** from the Sales Schedule Lines (tdsls3107m000) session.
- If all invoice lines and correction records for a sales schedule line have the **Released to Invoicing** status, the sales schedule line's status also becomes **Released to Invoicing**.

Creating and posting invoices in Invoicing

The creation and posting of the invoices for sales schedules occurs in the Invoices (cisli3105m000) session in Invoicing.

Note

LN creates a credit invoice (line) for invoice correction records.

When an invoice is sent for the sales schedule line's invoice line or correction record:

- The invoice lines or correction records receive the **Invoiced** status and the **Invoice Number** and **Invoice Date** fields are filled in the Sales Schedule Actual Delivery Lines (tdsls3140m000), Sales Schedule Actual Delivery Lines (tdsls3140m100), and Sales Schedule Invoice Lines (tdsls3140m200) sessions.
- LN updates the total invoiced quantity for the sales schedule in the Invoiced CUM (tdsls3533m000) session and the Sales Schedules (tdsls3111m000) session.
- LN updates the Sales Schedule Lines (tdsls3107m000) session with the invoice data.

If all invoice lines and correction records for a sales schedule line/planned warehouse order have the **Invoiced** status, the status of the sales schedule line/planned warehouse order also becomes **Invoiced**.

Processing and deleting sales schedules

After the invoice for a sales schedule line is sent, the sales schedule line has the **Invoiced** status. You can process and delete sales schedules that contain lines with the **Invoiced** status.

Use the Process Delivered Sales Schedules (tdsls3223m000) session to process sales schedules.

Use the Delete Sales Schedules (tdsls3224m000) session to delete processed or canceled and replaced sales schedules.

Processing

If you process sales schedules in the Process Delivered Sales Schedules (tdsls3223m000) session, LN:

- Creates sales schedule turnover history for the processed sales schedules. You can view the turnover history in the sales order/schedule history sessions.
- Updates the sales contract line's **Invoiced Quantity** if a sales contract is linked to the sales schedule line.
- Changes the sales schedule status, the sales schedule line status, and the sales schedule line's actual delivery line status from **Invoiced** to **Processed**.
- Processes the linked planned warehouse orders with the **Invoiced** status.

Note

You cannot process sales schedules for which uninvoiced invoice corrections exist.

If you process a sales schedule for which not all sales schedule lines, sales schedule actual delivery lines, or invoice corrections have the **Invoiced** status, LN:

1. Changes the status of the sales schedule lines, actual delivery lines, and invoice corrections with the **Invoiced** status to **Processed**.

2. Does not change the status of the sales schedule lines, actual delivery lines, and invoice corrections that do not have the **Invoiced** status.
3. Changes the sales schedule status to **Processing in Process**.

If, for a sales schedule with the **Processing in Process** status, the not yet processed sales schedule lines, actual delivery lines, or invoice corrections receive the **Invoiced** status, LN automatically processes these sales schedule lines, actual delivery lines, and invoice corrections and changes the sales schedule's status to **Processed**.

Deleting

In the Delete Sales Schedules (tdsls3224m000) session, you can delete **Canceled**, **Replaced**, and **Processed** sales schedule lines.

If you delete a processed sales schedule, LN deletes all data related to the sales schedule, such as:

- The sales schedule and sales schedule lines.
- The pick-up sheet and pick-up sheet lines.
- The sales release, release lines, and release line details.
- The sequence shipping information.
- The sales schedule actual delivery lines.
- The shipped CUM.
- The invoiced CUM.
- The FAB and RAW authorizations.

Note

- Sales schedule lines can only be deleted after successful deletion of the linked warehouse order, the planned warehouse order links, and the planned warehouse order(s).
- When all lines of a schedule are deleted, LN also deletes the schedule header.

Terminating sales schedules

If your relationship with a business partner has ended and you want to change the sold-to business partner specific item data, you can terminate the sales schedule. The status of the linked planned warehouse orders or sales schedule lines can affect the termination process.

Note

Use the Terminate Sales Schedules (tdsls3211m100) session to terminate sales schedules.

Created, Adjusted, Approved, or Planned

If you terminate a sales schedule and a related sales schedule line has the **Created**, **Adjusted**, or **Approved** status, the sales schedule line's status is changed to **Canceled**.

If you terminate a sales schedule and a related planned warehouse order has the **Planned** status, the planned warehouse order's status is changed to **Canceled**.

Note

If one of the following sales schedule lines is canceled, the results of the approval process are undone:

- A sales schedule line with the **Approved** status.
- A sales schedule line with the **Order Generated** status for which the outbound process is not yet started.

Order Generated or Released to Warehousing

If you terminate a sales schedule and a linked sales schedule line has the **Order Generated** status or a linked planned warehouse order has the **Released to Warehousing** status, the related outbound order line determines whether the planned warehouse order/sales schedule line can be canceled:

- If the outbound process is not yet started, the outbound order line is deleted and the planned warehouse order/sales schedule line receives the **Canceled** status.
- If the outbound process is started, the outbound order line and the planned warehouse order are set to **Canceled** and the sales schedule line receives the **Canceling in Process** status.
- If the outbound order line that is set to **Canceled** gets the **Shipped** status, the sales schedule line receives the **Canceled** status.

Partially Shipped or Partially Delivered

If you terminate a sales schedule and a linked sales schedule line has the **Partially Shipped** status, or a linked planned warehouse order has the **Partially Delivered** status, the related outbound order line determines whether the planned warehouse order/sales schedule line can be canceled.

- **Outbound process not yet started**
  The outbound order line for the remaining quantity is deleted. The planned warehouse order receives the **Finalized** status and the sales schedule line receives the **Goods Delivered** status.
- **Outbound process started**
  The outbound order line for the remaining quantity is set to **Canceled** and the sales schedule line keeps the **Partially Shipped** status. If the outbound order line that is set to **Canceled** gets the **Shipped** status, the sales schedule line receives the **Goods Delivered** status.
- The canceled part of the planned warehouse order quantity is updated on the planned warehouse order as the **Canceled Quantity**. Sales schedule lines linked to this planned warehouse order receive the **Goods Delivered** status.
- Sales schedule lines linked to a canceled planned warehouse order have cancellation history records. The sum of the canceled quantities of these history records is equal to the canceled quantity of the linked planned warehouse order.

Goods Delivered, Finalized, Released to Invoicing, Invoiced

If you terminate a sales schedule and a linked planned warehouse order has the **Finalized**, **Released to Invoicing**, or **Invoiced** status, or a sales schedule line has the **Goods Delivered**, **Released to**

Invoicing, or **Invoiced** status, you must finish the sales schedule procedure until they have the **Processed** status.

Sales schedule status

The status of a sales schedule that is terminated depends on the statuses of its planned warehouse orders/sales schedule lines:

- If not all planned warehouse orders/sales schedule lines have the **Processed** or **Canceled** status, the sales schedule has the **Termination in Process** status.
- If all planned warehouse orders/sales schedules lines have the **Processed** or **Canceled** status, the sales schedule receives the **Terminated** status.

If a sales schedule has the **Termination in Process** or **Terminated** status, no new revisions can be added to the sales schedule.

Sales order and schedule history

You can use sales order/schedule history to track the creation and modification of sales orders, installment orders, and sales schedules. You can keep certain information after the original order/schedule is completed.

To register the history of orders and schedules that are created, canceled, or processed, select these check boxes:

- **Sales orders**
  Log Order History, **Log EDI Order History** and **Log Actual Order Delivery History** check boxes in the Sales Order Parameters (tdsls0100s400) session
- **Sales order installments**
  Log Order History and **Log EDI Order History** check boxes in the Sales Order Parameters (tdsls0100s400) session
- **Sales schedules**
  Log Schedule History and **Log Actual Schedule Delivery History** check boxes in the Sales Contract Parameters (tdsls0100s300) session

Contents of history files

The order/schedule history files include:

- All created order/schedule (line) transactions. These order/schedule (line)s have not been processed.
- All invoiced order/schedule (line)s. These are the processed order/schedule (line)s. When an order is invoiced, the history also includes the gross profit of the order line.

The history files are of these record types:

- **Intake**
  The order/schedule line was added, changed, or deleted.

- **Cancellation**
  The order/schedule line was canceled.
- **Turnover**
  The order line was processed in the Process Delivered Sales Orders (tdsls4223m000) session, or the schedule line was processed in the Process Delivered Sales Schedules (tdsls3223m000) session.

The fields in this table determine if, when, and how the order/schedule history files are updated

Sales orders	
Field	**Retrieved from session**
Log Order History	Sales Orders (tdsls4100m000)
Log EDI Order History	Sales Orders (tdsls4100m000)
Start Logging History at	Sales Orders (tdsls4100m000)
Level of Intake Logging	Sales Order Parameters (tdsls0100s400)
Log Actual Order Delivery History	Sales Order Parameters (tdsls0100s400)
Log Component History	Sales Order Parameters (tdsls0100s400)
Sales order installments	
Field	**Retrieved from session**
Log Order History	Sales Order Parameters (tdsls0100s400)
Log EDI Order History	Sales Order Parameters (tdsls0100s400)
Start Logging History at	Sales Order Parameters (tdsls0100s400)
Level of Intake Logging	Sales Order Parameters (tdsls0100s400)
Sales schedules	
Field	**Retrieved from session**
Log Schedule History	Sales Schedules (tdsls3111m000)

Level of Intake Logging	Sales Contract Parameters (tdsls0100s300)
Log Actual Schedule Delivery History	Sales Contract Parameters (tdsls0100s300)

Note

- For sales schedules, history logging always starts during approval.
- If planned warehouse orders are used for sales schedules, sales schedule line history is based on the planned warehouse order information.

Deleting history files

You can restrict the total amount of history data with the Archive/Delete Sales Order/Schedule History (tdsls5201m000) session.

History files are the basis for statistics. Before you delete the history files, verify that the statistics are fully updated. If the history files are deleted before the update, you cannot fully update the statistics.

Note

You cannot modify the history data. It is only used for information purposes.

Appendix A
Glossary

A

additional cost line

Includes a cost item that can be linked as additional costs to an order or shipment. Examples of additional cost lines are administrative costs added to the order costs if the order amount is lower than a certain value, or freight costs added to the order if the total weight of the sold/purchased goods exceeds a certain value.

additional costs

Charges for extra services, such as extra packaging, insurance, and so on. Additional costs are added to the freight costs of a shipment, load, or a freight order cluster. They are levied for shipment lines or freight order cluster lines, which can be invoiced to the customer. This depends on the agreements made with the business partner.

additional costs

The cost items that can be placed on an order or shipment to charge extra costs for an order or shipment.

additional information fields

User-defined fields that can be linked to LN tables.

The contents of additional fields can be transferred between LN tables. Additional information fields are meaningless to LN as no functional logic is linked to the contents of these fields.

See: *Additional information fields (p. 73)*

administrative warehouse

A warehouse that offers a view of a warehouse that is managed by a business partner. An administrative warehouse corresponds with a physical warehouse controlled by the business partner's system. In that physical warehouse, the inbound and outbound processing takes place. The administrative warehouse mirrors the inventory levels present in the business partner's warehouse.

Administrative warehouses are used in situations such as the following:

- The warehouse is located at your site, but a supplier manages and possibly owns the inventory until you use the items.
- The warehouse is located at a customer's site. You own the inventory until the customer uses the items, but the customer manages the inventory.
- The warehouse is located at a subcontractor's site. You own the unfinished goods present in the warehouse, but the subcontractor manages the inventory.

Administrative warehouse is not one of the warehouse types that you can define in LN, setting up an administrative warehouse requires various parameter settings.

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

appropriate menu

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

ASN

See: *advance shipment notice (p. 160)*

assembly order

An order to assemble a product on one or more assembly lines.

ATP

See: *available-to-promise (p. 161)*

available-to-promise

The item quantity that is still available to be promised to a customer.

In LN, available-to-promise (ATP) is part of a more extended framework of order promising techniques called capable-to-promise (CTP). If an item's ATP is insufficient, CTP goes beyond ATP in that it also considers the possibility of producing more than was initially planned.

In addition to the standard ATP functionality, LN also uses channel ATP. This term refers to the availability of an item for a certain sales channel, taking into account the sales limits for that channel.

For all other types of order promising functionality used in LN, the term CTP is used.

Acronym:

Abbreviation: ATP

backflushing

The automatic issue of materials from inventory, or accounting for the hours spent manufacturing an item, based on theoretical usage and the quantity of the item reported as complete.

blanket warehousing order

A warehousing order that is generated during the creation of a push schedule and that contains:

- A position number and sequence number of zero.
- An item as defined on the purchase schedule.
- An order quantity equal to the quantity as defined on the purchase contract line.
- An empty planned delivery date and planned receipt date, but a contract date similar to the purchase contract date.
- A lot selection defined as Any.

Business Object Document (BOD)

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

buyer

The employee of your company who is the contact to the concerned buy-from business partner. The buyer is also known as the purchasing agent.

cluster

In Enterprise Planning, a grouping of warehouses connected to each other by supplying relationships.

A cluster represents a geographical location that consists of one or more warehouses. Enterprise Planning considers these warehouses as one unit for planning purposes.

clustering

Grouping several schedules lines to send the lines in one purchase release.

For clustering, first the next schedule issue date, according to the issue pattern, is determined. Next, the schedule lines are clustered based on the segment time unit, and the segment length, derived from the segment set.

Note
Clustering only applies to non-referenced schedules.

configurable item

An item that has features and options and must be configured before any activities can be performed on it. If the configurable item is generic, a new item is created after configuration. If the item is manufactured or purchased, the configuration is identified by item code and option list ID.

Manufactured items with the default supply source set to **Assembly** and **Generic** items are always configurable. **Purchased** items with a purchase schedule in use can be configurable. Configurable **Purchased** items can be used within Assembly Control only.

configured item

A configurable item that is configured, which means options and features are chosen for the item.

A configured item can have components that are also configured, for example, a bike with a bike light. If a configured item is an end item, it is configured with its configurable components and stored as a product variant.

consumption

The issue from the warehouse of consigned items by or on behalf of the customer. The customer's purpose is to use these items for sale, production, and so on. After the items are issued, the customer becomes the owner of the items and the customer must pay the supplier.

CUM reset date

The date and time at which a schedule's cumulatives/ authorizations are reset.

cumulatives (CUMs)

The year-to-date totals for quantities shipped, received, required, and invoiced.

Cumulatives are used as schedule statistics to track if its status is ahead or behind schedule compared to the demand.

electronic data interchange (EDI)

The computer-to-computer transmission of a standard business document in a standard format. Internal EDI refers to the transmission of data between companies on the same internal company network (also referred to as multisite or multicompany). External EDI refers to the transmission of data between your company and external business partners.

fab authorization

The valid authorization for the business partner to start the production for a quantity of items required on a purchase schedule. The fab authorization is expressed as a cumulative quantity and is calculated using the fab period.

fab period

The time period during which the supplier is authorized to manufacture the goods required on a schedule, calculated from the schedule issue date on for push schedules, and from the current date on for pull forecast schedules.

The fab period is expressed in a number of days.

Example

- CUM start quantity: 10000
- Schedule issue date/current date: 05.07.99
- Fab period: 20 days

Issue/current date	Quantity
05.07.99	100
12.07.99	100
19.07.99	100
26.07.99	100

```
Fab time fence   : 05.07.99 (+ 20 days) = 25.07.99.
Fab authorization: 10000 + 100 + 100 + 100 = 10300.
```

firm requirement

A requirement that is handled as an actual order and that can be shipped.

frozen period

The overlap period of the frozen zone+ and the frozen zone-. No changes to the purchase schedule line are permitted in this period.

generic price list

A product variant that is generated from customer specifications can have a detailed sales price based on the selected options. Purchase prices for generic items can also be generated. The purchase price is used to calculate the cost price. Matrices can be defined if options exist for different product features that have mutual relationships that influence the purchase or sales price.

high fab authorization

The highest fab authorization ever calculated on a purchase schedule, counted from the latest CUM reset date on.

high raw authorization

The highest raw authorization ever calculated on a purchase schedule, counted from the latest CUM reset date on.

immediate requirement

A requirement that must be shipped as soon as possible.

invoice

A document stating a list of prices of delivered goods and services that must be paid under certain conditions.

invoiced cumulative

A schedule's total invoiced cumulative quantity, calculated from the CUM reset date on up to the last transaction date, which is the invoice date. Invoiced CUMs are updated as soon as a an invoice is approved by Financials.

item master plan

An item-specific, overall logistic plan that contains planning data and logistic targets for sales, internal and external supply, and inventory. All planning data in the item master plan is specified by plan period. Enterprise Planning uses this data to carry out master-planning simulations.

Within the item master plan, you can distinguish the following subplans:

- demand plan
- supply plan
- inventory plan

In addition, an item's master plan contains information about actual demand, actual supply, planned supply in the form of planned orders, and expected inventory.

If an item has a master plan and channels have been defined for this item, each channel usually has its own channel master plan. A channel master plan contains channel-specific information only, that is, demand data and information about sales restrictions.

Item master plans and channel master plans are defined within the context of a scenario. These scenarios can be used for what-if analyses. One of the scenarios is the actual plan.

item order plan

A time-phased overview of your order planning.

The item order plan contains overview values for demand and forecast on one hand, and the other hand it provides information about scheduled receipts (actual orders) and planned supply (planned orders).

item subcontracting

The entire production process of an item is outsourced to a subcontractor.

Kanban

A demand-pull system of just-in-time production that regulates the supply of items to shop floor warehouses.

Kanban uses standard containers or lot sizes (also called bins) to deliver items to shop floor warehouses. In the shop floor warehouse, two or more bins are available with the same items. Items are only taken from one bin. If a bin is empty, a new bin is ordered and the items are taken from the (second) full bin. To each bin a label is attached. The line stations use the label to order a full bin with the required items. As a result, no inventory administration is done in the shop floor warehouse for the floor stock items that are used.

logistic agreements

Conditions that must be formally agreed upon between a supplier and a customer regarding logistic data, such as schedule messages, frozen periods, authorizations, delivery patterns, carrier, and so on.

lower bound

Time period during which the schedule line quantity can increase, but not decrease, and during which the deletion of schedule lines is not allowed.

Lower bound applies when the end of the frozen zone+ lies before the end of the frozen zone-.

master-based planning

A planning concept in which all planning data is accumulated into time buckets with predefined lengths.

In master planning, all demand, supply, and inventory data is handled in terms of these time buckets, and is stored in master plans.

In master planning, supply is planned in the form of a supply plan. This supply plan is calculated on the basis of demand forecasts, actual orders, and other information. For production planning, this planning method only considers critical requirements, as recorded in an item's bill of critical materials and bill of critical capacities.

Note

In Enterprise Planning, you can maintain a master plan for an item, even if you plan all supply with order planning.

material release

A schedule on which forecasted information is provided about shipping times, delivery times, and quantities.

In general, a material release can be considered as a planning release. However, the material release can also contain the actual order.

MPN set

A set of manufacturer part numbers (MPNs) that belongs to a purchase order line or a purchase schedule line.

nonreferenced schedule

A schedule that contains lines without a reference number. Because no specific requirement exists for the schedule line, nonreferenced schedule lines can first be clustered and then ordered, shipped, and received together.

normal contract

A customer-oriented contract, agreed upon by suppliers and customers, that is used to record specific agreements. A normal contract is usually valid for approximately one year.

A normal contract cannot be activated if another active contract exists for the same business partner in a specific period.

offsetting

The process of planning backwards to look for a valid delivery moment on which requirements can be delivered in time. Based on the generated delivery moments, requirements are clustered in Enterprise Planning.

Example

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Requirements	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	1	1	-	-
Delivery pattern	-	-	X	-	-	-	-	-	-	X	-	-	-	-	-	-	X	-	-	-
Clustered demand	-	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-

open balance

The balance of all unpaid invoices relating to one particular business partner.

operation subcontracting

The work on one or more operations in an item's production process is outsourced to a subcontractor.

order-based planning

A planning concept in which planning data is handled in the form of orders.

In order planning, supply is planned in the form of planned orders. LN takes into account the start and finish dates of individual planned orders. For production planning, this method considers all material and capacity requirements, as recorded in an item's BOM and routing.

Note

In Enterprise Planning, you can maintain a master plan for an item, even if you plan all supply with order planning.

order controlled/SILS

A demand-pull system that regulates the supply of items to shop floor warehouses in the sequence in which they are needed.

In this supply system, items that are required for a specific assembly order, and at a particular line station of the assembly line, are called off at an earlier line station, called the trigger-from station. The number of items that is called off depends on what is needed for specific assembly orders in a specified time fence, called the maximum time interval.

In general, the items that are supplied to the shop floor warehouse by SILS, are fast movers and are processed in high volumes. There is a direct link between these items and the assembly orders they are used for. In addition, one warehouse order set can only supply the goods needed by one assembly order.

outbound-order line

A warehouse-order line that is used to issue goods from a warehouse.

An outbound-order line gives detailed information about planned issues and actual issues, for example:

- Item data.
- Ordered quantity.
- Warehouse from where the goods are issued.

over-delivery

A positive deviation from the original ordered quantity.

package definition

A particular configuration of items and their packaging. A package definition for an item can, for example, be the following: a pallet contains 12 boxes and each box contains 4 pieces.

See: general-level package definition, item-level package definition

packaging item

The containers or supports that are used to hold and move goods within manufacturing, distribution processes, and, specifically, within the warehouse. For example: boxes, pallets.

packing slip

An order document that shows in detail the contents of a particular package for shipment. The details include a description of the items, the shippers or customers item number, the quantity shipped, and the inventory unit of the shipped items.

partial delivery

The delivery of a part of the total order quantity.

pattern

A scheme on which you can define the day of the week, day of the month, or day of the year, and the time of the day you want an activity, such as a release or a delivery, to be carried out.

pattern code

The code used to identify the pattern for your activities. The pattern defines the date and time, such as the month or the day of the month, on which you want to carry out the activity.

peg

A combination of project/budget, element and/or activity, which is used to identify costs, demand, and supply for a project.

pick-up sheet

A list of items to be picked-up at the supplier’s site by a specific carrier for transport to the customer on a specific day.

planned inventory transactions

The expected changes in the inventory levels due to planned orders for items.

planned receipt date

The planned date on which the items on the order/schedule line are planned to be received. The planned receipt date cannot occur before the order date/schedule generation date.

planned requirement

A requirement that is communicated to a business partner for information and planning purposes only.

planned shipment date

The planned date on which the items on the order/schedule line must be shipped/picked up at the ship from business partner's site. The planned shipment date cannot fall before the order date.

planned warehouse order

An order created in Sales that forms the basis for most schedule-related processes. Planned warehouse orders, which are created during sales schedule approval, decouple schedule updates and revisions from warehouse orders. They serve as the interface between Sales on one hand and Warehousing and Invoicing on the other hand.

prior required CUM

A schedule's total required CUM calculated from the last CUM reset date through the (next) schedule issue date.

In contrast to required CUM, prior CUM also includes the requirements of released schedule lines for which no receipts are booked yet.

pull schedule

Two types of pull schedules exist:

- **Pull forecast schedules**
  A list of time-phased planned requirements, generated by Enterprise Planning, that are sent to the supplier. Pull forecast schedules are only used for forecasting purposes. To actually order the items, a pull call-off schedule must be generated.
- **Pull call-off schedules**
  A list of time-phased specific requirements of purchased items, triggered from Assembly Control, or Warehousing (KANBAN, Time-phased order point).

purchase contract line detail

The agreement with a supplier about a certain item for a specific site (warehouse). A purchase contract line detail contains quantity and logistic conditions related to the supply of one item by a specific warehouse, during a period of time.

Contract line details can exist only for corporate purchase contracts.

purchase release

A purchase release is used to send out, under one release number, those schedules that share the following common characteristics:

- Buy-from business partner
- Ship-from business partner
- Ship-to address
- Release type (material release/ shipping schedule/ sequence shipping schedule)
- Shipment based schedule/ receipt based schedule
- Communication method
- Warehouse

purchase schedule

A timetable of planned supply of materials. Purchase schedules support long-term purchasing with frequent deliveries and are usually backed by a purchase contract. All requirements for the same item, buy-from business partner, ship-from business partner, purchase office, and warehouse are stored in one schedule.

push schedule

A list of time-phased requirements, generated by a central planning system, such as Enterprise Planning or Project, that are sent to the supplier. Push schedules contain both a forecast for the longer term and actual orders for the short term.

A push schedule can use one of the following release types:

- **Material Release**: only material releases are sent. Shipping is performed based on the **Firm** and **Immediate** requirements in the material release.
- **Shipping Schedule**: both material releases and shipping schedules are sent. Shipping is carried out based on the **Firm** and **Immediate** requirements in the shipping schedule. The material release only sends forecasting data.
- **Shipping Schedule Only**: only shipping schedules are sent. Shipping is carried out based on the **Firm** and **Immediate** requirements in the shipping schedule. No forecasting data is sent to the supplier.

raw authorizations

The valid authorization for the business partner to buy the raw materials required on a purchase schedule. The raw authorization is expressed as a cumulative quantity and is calculated using the raw period.

raw period

The time period during which the supplier is authorized to procure the raw materials required on a schedule, calculated from the schedule issue date on for push schedules, and from the current date on for pull forecast schedules.

The raw period is expressed in a number of days.

Example

- CUM start quantity: 10000
- Schedule issue date/current date: 05.07.99
- Raw period: 20 days

Issue/current date	Quantity
05.07.99	100
12.07.99	100
19.07.99	100
26.07.99	100

```
Raw time fence   : 05.07.99 (+ 20 days) = 25.07.99.
Raw authorization: 10000 + 100 + 100 + 100 = 10300.
```

receipt

The physical acceptance of an item into a warehouse. A receipt registers: received quantity, receipt date, packing-slip data, inspection data, and so on.

received cumulative

A schedule's total received cumulative quantity, calculated from the CUM reset date on up to the last transaction date, which is the receipt date. Received CUMs are updated as soon as receipts are made for the schedule line(s).

referenced schedule

A schedule that contains lines with reference numbers. When goods are shipped, received, and invoiced, the reference numbers are used to communicate with suppliers and other LN packages.

regeneration

The process of rearranging schedule lines and moving the lines in time.

Regeneration is only carried out for non-referenced schedules.

release revision number

A number that uniquely identifies the revision of the release. The release revision number indicates the updates that are sent to the business partner.

release type

A classification used to specify the type of the release based on which schedule requirements are grouped and EDI messages can be generated. These messages are indicated by the used schedule.

required cumulative

A schedule's total required cumulative quantity, calculated from the CUM reset date on up to the planned requirement date, which is the planned delivery date or planned shipment date. Required CUMs are updated as soon as receipts are confirmed for the schedule line(s).

requirement type

Three requirement types exist that represent a requirement in time, used for scheduling.

The available requirement types are:

- **Immediate**
- **Firm**
- **Planned**

For non-referenced schedules, requirement types are linked to segments.

For pull forecast schedules, the requirement type is always **Planned** or **Immediate**. For pull call-off schedules, the requirement type is always **Firm**.

return order

A purchase or sales order on which returned shipments are reported. A return order can only contain negative amounts.

sales contract

Sales contracts are used to register agreements about the delivery of goods with a sold-to business partner .

A contract is comprised of the following:

- A sales contract header with general business partner data, and optionally, a linked terms and conditions agreement.
- One or more sales contract lines with price/discount agreements and quantity information that apply to an item or price group.

sales release

Identifies, by one release number, those sales schedules that share the following common characteristics:

- Sold-to business partner.
- Ship-to business partner.
- Ship-to address.
- Release type (material release/ shipping schedule/ sequence shipping schedule/ pick-up sheet).
- Shipment based schedule/ receipt based schedule.
- Schedule quantity qualifier.
- Forecast horizon start and end.
- Sales release origin.
- Customer release.
- (Customer order).

sales schedule

A timetable of planned supply of materials. Sales schedules support long-term sales with frequent deliveries. All requirements for the same item, sold-to business partner, ship-to business partner, and delivery parameter are stored in the same sales schedule.

sales schedule revision number

A number that uniquely identifies the revision of the sales schedule. The sales schedule revision number indicates the sales schedule updates that are sent by your business partner.

schedule issue date

The date and time, calculated by the issue pattern, which, for non-referenced schedules, is used to define the moment at which:

- Schedule lines are clustered.
- A purchase release is sent.

segment

A part of a schedule that defines a unit of time used for scheduling. A segment contains a requirement type, a segment time unit, and a segment length.

segment length

The period that is assigned to the segment. The period is expressed in the segment time unit.

segment set

A set that is used to define the structure of a schedule. A segment set consists of a number of segments.

The segment set is used for schedule regeneration and for clustering schedule lines. No segment sets are used for pull call-off schedules.

segment time unit

The time unit in which the segment is expressed, for example days, weeks, months, and so on.

self-billing

The periodic creation, matching, and approval of invoices based on receipts or consumption of goods by an agreement between business partners. The sold-to business partner pays for the goods without having to wait for an invoice from the buy-from business partner.

sequence shipping schedule

A shipping schedule with precise information about the production or deliveries of the requirements. This schedule can include the production or delivery sequence, and the order, the place, and the time of unloading after shipment.

service subcontracting

Allot the service related work of an item to another company. The entire maintenance or repair process, or only a part of the same, can be allotted. Service subcontracting can be used with or without material flow support.

shipment

All goods that are transported to a specific address on a specific date and time by using a specific route. An identifiable part of a load.

shipment notice

See: *advance shipment notice (p. 160)*

shipment reference

Identifies a group of items that are called off at the same time.

shipped cumulative

A schedule's total shipped cumulative quantity for which an advance shipment notice is received, calculated from the CUM-reset date on up to the last transaction date, which is the shipment date. If you do not use advance shipment notices, shipped CUMs are not updated in a logistic company.

shipping schedule

A schedule on which detailed information is given about shipping times or delivery times and quantities. A shipping schedule facilitates just-in-time (JIT) management.

special contract

A customer-oriented contract, agreed upon by buy-from business partners and sold-to business partners that is used to record specific agreements for specific projects. A special contract can also be a promotional contract.

For special contracts, an overlap in effectivity periods is allowed for the same item/business partner combination.

subcontracting

Hiring certain services from another party, for example the execution of a part of a project or an operation of a production order.

subcontracting purchase order

In LN, subcontracting is considered as purchasing a service from a subcontractor. Therefore, when subcontracting, a subcontracting purchase order is generated to record the subcontracted operation(s) and the associated costs.

system date

The current date that is generated by the system.

terms and conditions agreement

An agreement between business partners about the sale, purchase, or transfer of goods, in which you can define detailed terms and conditions about orders, schedules, planning, logistics, invoicing, and demand pegging, and define the search mechanism to retrieve the correct terms and conditions.

The agreement includes the following:

- A header with the type of agreement and the business partner(s).
- Search levels with a search priority and a selection of search attributes (fields) and linked terms and conditions groups.
- One or more lines with the values for the search levels' search attributes.
- Terms and conditions groups with detailed terms and conditions about orders, schedules, planning, logistics, invoicing, and demand pegging for the lines.

time-phased order point

A push system that regulates the time-phased supply of items to warehouses.

The quantity of items that is supplied to the warehouse depends on:

- The available inventory in the warehouse.
- The inventory that is planned to be delivered to the warehouse within the specified order horizon.
- The specified safety stock, optionally adjusted to the seasonal factor for the current period, for the item and warehouse.

If the available inventory plus the planned inventory are below the reorder point, the inventory in the warehouse is replenished.

Abbreviation: TPOP

See: safety stock

TPOP

See: *time-phased order point (p. 177)*

upper bound

Time period during which the schedule line quantity can decrease, but not increase, and during which the creation of new schedule lines is not allowed.

Upper bound applies when the end of the frozen zone- lies before the end of the frozen zone+.

vendor managed inventory (VMI)

An inventory management method according to which the supplier usually manages the inventory of his customer or subcontractor. Sometimes, the supplier manages the supply planning as well. Alternatively, the customer manages the inventory but the supplier is responsible for supply planning. Inventory management or inventory planning can also be subcontracted to a logistics service provider (LSP).

The supplier or the customer may own the inventory delivered by the supplier. Often, the ownership of the inventory changes from the supplier to the customer when the customer consumes the inventory, but other ownership transfer moments occur, which are laid down by contract.

Vendor-managed inventory reduces internal costs associated with planning and procuring materials and enables the vendor to better manage his inventory through higher visibility to the supply chain.

VMI warehouse

A warehouse for which the supplier of the stored goods performs one or both of the following tasks: manage the warehouse, including activities surrounding inbound and outbound processes, or plan the supply of the goods in the warehouse. The supplier may also be the owner of the inventory in the warehouse. The warehouse is usually located at the customer's premises.

warehouse order

See: *warehousing order (p. 178)*

warehousing order

An order for handling goods in the warehouse.

A warehouse order can be of the following inventory-transaction types:

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

Each order has an origin and contains all the information required for warehouse handling. Depending on the item (lot or non-lot) and warehouse (with or without locations), lots and/or locations can be assigned. The order follows a predefined warehousing procedure.

Note
In Manufacturing a warehousing order is often called a warehouse order.

Synonym: warehouse order

warehousing order type

A code that identifies the type of a warehousing order. The default warehousing procedure that you link to a warehousing order type determines how the warehousing orders to which the order type is allocated are processed in the warehouse, although you can modify the default procedure for individual warehousing orders or order lines.

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