Supply Planning by Supplier

Publication Information

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Objectives

The Vendor Managed Inventory module in Enterprise Planning supports supply planning by a supplier for a customer. In this scenario, the customer leaves it to the supplier to decide the dates and quantities of the deliveries, based on the agreed terms and conditions.

This guide describes both the supplier's side and the customer's side of the functionality.

Intended audience

This document is intended for planners who use ERP LN to plan the supply of items on behalf of customers, or planners that leave the supply planning of particular items to their suppliers.

The intended audience can include implementation consultants, product architects, support specialists, and so on.

Assumed knowledge

Understanding this document is easier if you have some basic knowledge of the functionality of the Enterprise Planning package, and in particular of the order-based planning procedure.

Document summary

This document contains the following chapters:

- **Introduction**
  Provides an introduction to the functionality to let the supplier determine when and how to supply an item to the customer.
- **Setup and procedure**
  Provides stepwise instructions to set the system up and how to run the planning. The chapter provides separate instructions for the supplier and the customer.
- **Forecast**
  Provides details on the concept of forecast and instructions on how to create and use forecast information.
- **Confirmed supply**
  Provides information on the concept of confirmed supply and instructions on how to create and use confirmed supply.
- **Planning methods**
  Provides information on the methods the supplier can use make sure sufficient inventory is available at the supplier's site.

- **Replenishment methods**
  Provides information on the methods the supplier can use make sure sufficient inventory is available at the customer's site.

- **Minimum and maximum inventory**
  Provides information on the use of the agreed minimum and maximum inventory level.

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.

Terms that look like these words indicate a link to a glossary definition. If you view this document online, you can click these terms to go to the glossary definition at the end of the document.

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Chapter 1
Introduction

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Supply planning by supplier

This topic contains an overview of how ERP LN supports the situation where a supplier performs the supply planning for a customer.

A company can outsource the supply planning for some purchased items. In that case, that company does not send the supplier orders to delivery specific quantities on specific dates and times. Instead, the supply planning is delegated to the supplier who decides when to deliver what quantity. The customer and supplier have defined a <u>terms and conditions agreement</u> that specifies all relevant planning parameters. This terms and conditions agreement is linked to a valid <u>sales contract</u> or <u>purchase contract</u>.

Vendor managed inventory

Supply planning by the supplier is an aspect of <u>vendor managed inventory (VMI)</u>. To give the supplier control over the inventory, the supplier defines the warehouse at the customer's site as warehouse in the supplier's ERP LN system.

The supply planning by supplier can be applied in three scenarios as shown in the following table:

Scenario	Owner of the supplied goods at the customer's site	Responsible for managing the warehouse at the customer's site	Responsible for the supply planning
Full VMI	Supplier	Supplier	Supplier
Planning by supplier	Customer	Customer	Supplier
Warehouse management by customer	Supplier	Customer	Supplier

For more information, refer to the Vendor managed inventory online manual topic or to *User's Guide for Vendor Managed Inventory (U9501A US)*.

Order-based planning and VMI

The main difference between regular <u>order-based planning</u> and supply planning by supplier is the following:

- **Regular order-based planning**
  In general, if regular order-based planning is applied, Enterprise Planning generates <u>planned purchase orders</u> for the items that must be delivered by a supplier.

- **Supply planning by supplier**
  If the supplier of an item is a valid <u>VMI supplier</u>, Enterprise Planning does not generate purchase orders for the item. Instead, Enterprise Planning can generate a <u>forecast</u> that is sent to the supplier. The supplier performs the supply planning based on the forecast or the actual inventory levels at the customer. In general, the replenishment is accomplished by using <u>warehouse transfers</u>.

Overview

The following diagram shows the general information flow and the goods flow for the setup where the supplier takes care of the planning.
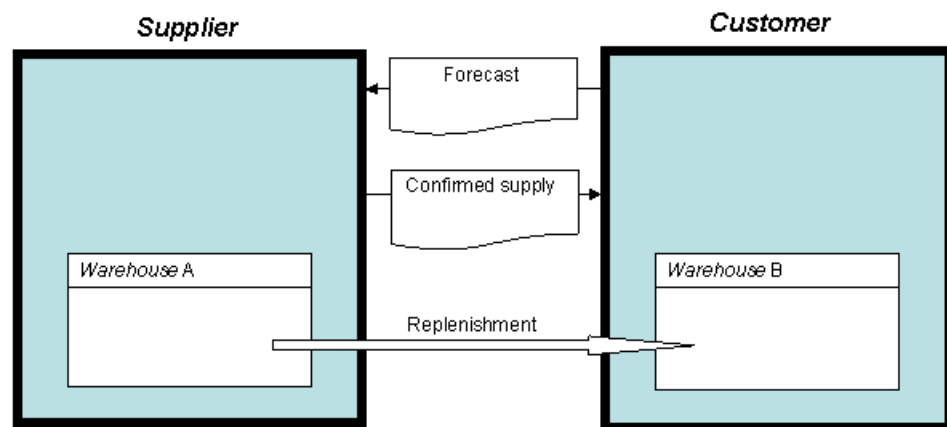
Forecast

In the general case, the customer sends the supplier a <u>forecast</u> of the demand for an item. The supplier can use that forecast as input for its order-based planning process.

If the customer does not send a forecast for an item, the supplier can base the supply planning on the actual inventory levels.

The customer aggregates the forecast to <u>forecast periods</u>. For example, the forecast can be defined by week.

Enterprise Planning can generate the forecast, but the customer can manually modify the forecast before sending it to the supplier.

For more information, refer to *Forecast (VMI) (p. 3-1)*

Confirmed supply

Depending on the setup, the supplier sends the customer a <u>confirmed-supply message</u>.

Enterprise Planning can generate the confirmed supply, but the supplier can also use other methods to determine the confirmed supply. If Enterprise Planning generates the confirmed supply, the supplier can manually modify the confirmed supply before sending it to the customer.

For more information, refer to *Confirmed supply (VMI) (p. 4-1)*

Revisions

Each forecast the customer sends to the supplier gets a <u>revision</u> number. The corresponding <u>confirmed supply</u> is identified with the same revision number.

You can store past revisions for future reference. You can define the number of revisions ERP LN retains in the EP Parameters (cprpd0100m000) session. For example, you can set up ERP LN to store the 10 most recent revisions.

Restrictions

The forecast and confirmed supply do not include <u>effectivity units</u>. If an item is setup for <u>unit effective supply</u>, the item cannot be supplied by a <u>VMI supplier</u>.

Example

The following diagram shows how the situation is represented in the supplier's system.
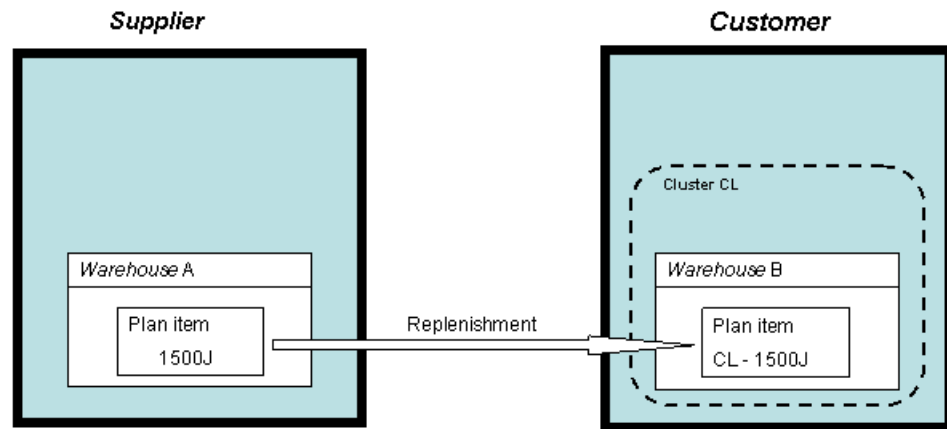
In this example, the supplier defined the following entities:

- Cluster CL, that represents the customer's site.
- Warehouse A; this warehouse is located at the supplier's own site.
- Warehouse B, a VMI warehouse linked to cluster CL.
- Item 1500J, an item manufactured by the supplier and sold to the customer.
- Plan item 1500J, with default warehouse A. Note: the cluster segment of the item code is empty, or else it differs from CL.
- Plan item CL - 1500J, with default warehouse B. Note: the cluster segment of the item code is CL.

The customer in this example regularly sends a forecast to the supplier. Based on this forecast, the supplier generates planned distribution orders to deliver plan item CL - 1500J to warehouse B (at the customer) and planned production orders for 1500J and its components.

The planned orders for plan item CL - 1500J are not executed, but converted to confirmed supply. The confirmed supply is the delivery quantity that the supplier commits to. Optionally, the supplier can change the confirmed supply, before sending the confirmed-supply data to the customer.

Finally, the supplier replans the supply, based on the confirmed supply sent to the customer. Because the confirmed supply can deviate from the received forecast, this planning run creates planned orders which can differ from the planned orders that were based on the forecast.

Procedures

For instructions on how to set the system up and how to run the planning and replenishment, refer to the following topics:

- **Supplier's side**
    - *To perform the supply planning for your customer - Setup (p. 2-1)*
    - *To perform the supply planning for your customer - Procedure (p. 2-4)*
- **Customer's side**
    - *To let your supplier perform the supply planning - Setup (p. 2-7)*
    - *To let your supplier perform the supply planning - Procedure (p. 2-9)*

VMI business partner selection

This topic describes how ERP LN selects a business partner in a vendor managed inventory (VMI) situation.

Some restrictions for the use of VMI functionality are also described.

Supplier side

For the VMI supplier, the customer is uniquely defined by the cluster segment of the item code.

To carry out the planning for a customer, a valid terms and conditions agreements must be present for that customer.

If you perform the planning for multiple customers for the same item, you link each customer to a different cluster; thus, you differentiate between the plan items for these customers.

For more information, refer to *To determine the VMI role (p. 1-7)* .

Customer side

Only a single VMI supplier can carry out your planning for an item at any single time. However, you can switch from one VMI supplier to another.

To select the effective VMI suppliers, ERP LN performs the following steps:

1. ERP LN searches for suppliers with terms and conditions agreements effective between the current date ('now') and the scenario finish date.
2. If ERP LN finds multiple valid VMI suppliers, ERP LN sorts the suppliers according to the effective dates and expiry dates of their respective terms and conditions agreements.

3. If the effectivity period of one VMI supplier completely encloses the effectivity period of another VMI supplier, that other VMI supplier is ignored.

4. As soon as a valid supplier becomes effective, ERP LN selects that supplier as the VMI supplier.

5. If, at a particular date, no supplier is effective as VMI supplier, no more VMI suppliers can be selected for later dates. For example, you cannot have a supplier carry out the planning in March, then use regular planning methods in April, and have the supplier carry out the planning again in May. If you try this, Enterprise Planning generates a signal and handles the second period (May in the example) by using the regular supply method.

   However, of the total period between the current date and the scenario finish date, you can use regular planning in the first part of the period, later, a VMI supplier can carry out the supply planning for a particular time, and in the last part of the period you can use regular planning again.

Example

The following diagram shows the effective periods for the terms and conditions of suppliers A, B, and C.
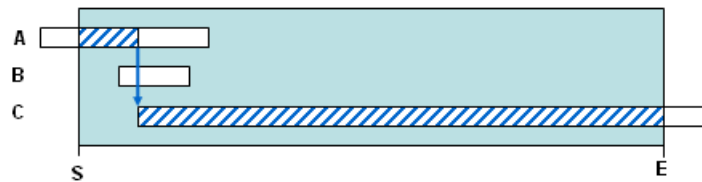
Legend

S **Scenario Start Date**
E **Scenario Finish Date**
▨▨ Supplier selected as VMI supplier

First, ERP LN selects supplier A as the VMI supplier.

When another supplier (C) becomes effective, ERP LN selects that supplier as the VMI supplier.

ERP LN ignores VMI supplier B, because its effective period is enclosed in VMI supplier A's effective period.

Note

If, in the example, supplier C's effective period would have started a week after supplier A's effective period ends, ERP LN would not have accepted supplier C as VMI supplier, because no gaps between two VMI suppliers are allowed.

Multiple sourcing

Multiple sourcing is permitted, as long as no more than one of the suppliers is a VMI supplier.

If you use multiple sourcing, the order planning procedure generates requirements and distributes the requirements over the available sources in the usual way. The demand that is allocated to the VMI supplier results in forecast that is sent to the VMI supplier. The other demand results in planned purchase orders or planned distribution orders.

To view all active VMI suppliers and regular suppliers for a plan item, take the following steps:

1. Start the Items - Planning (cprpd1100m000) session.
2. Select the plan item.
3. On the **Specific** menu, point to **Product Structure**, and then click **Active Suppliers by Plan Item**

To determine the VMI role

This topic describes how ERP LN determines the value of the **VMI Role** field in the Items - Planning (cprpd1100m000) session.

Whenever you run order-based planning, ERP LN reevaluates the **VMI Role** field. ERP LN takes the entire period between current date and the planning horizon into account. If at any time in that period an applicable terms and conditions agreement is found, the **VMI Role** field is set to **Customer** or **Supplier**, even if this terms and conditions agreement is not effective at the current date. In this way, ERP LN ensures the order-based planning run carries out the VMI-functionality if it is needed.

Overall procedure

First, ERP LN checks whether the VMI role is **Supplier**; if not, ERP LN checks whether the VMI role is **Customer**. If neither applies, ERP LN sets the **VMI Role** field to **Not Applicable**.

To check if you are the supplier

To determine whether the VMI role is **Supplier**, ERP LN performs the following actions:

1. ERP LN retrieves the plan item's cluster, based on the first segment of the plan item code and checks whether this cluster has a sold-to business partner.

A cluster's sold-to business partner is defined in the **Sold-to Business Partner** field in the Clusters (tcemm1135m000) session. In the same session, you can optionally define a cluster's ship-to business partner.

2. ERP LN searches for a valid terms and conditions agreement for the combination of item, sold-to business partner, and optionally ship-to business partner.

   A terms and conditions agreement defined for a group of items, such as an item group or product type, is valid for every item within that group of items.

   A terms-and-conditions agreement without an active sales contract is not a valid terms-and-conditions agreement.

3. ERP LN finds the effective terms and conditions lines between the current date and the planning horizon, based on the terms and conditions search attributes.

4. From the applicable record in the Planning Terms and Conditions (tctrm1135m000) session, ERP LN retrieves the value of the **Responsible for Supply Planning** check box.

5. If the **Responsible for Supply Planning** check box is selected, ERP LN sets the **VMI Role** field to **Supplier**.

To check if you are the customer

To determine whether the VMI role is **Customer**, ERP LN performs the following actions:

1. ERP LN searches for suppliers (buy-from business partners) with terms and conditions agreements effective between the current date ('now') and the planning horizon.

   ERP LN also retrieves the item's default warehouse.

   This terms and conditions agreement must be valid for the combination of item, buy-from business partners, and warehouse.

   A terms and conditions agreement defined for a group of items, such as an item group or product type, is valid for every item within that group of items.

   A terms-and-conditions agreement without an active purchase contract is not a valid terms-and-conditions agreement.

2. ERP LN finds the effective terms and conditions lines between the current date and the planning horizon, based on the terms and conditions search attributes.

3. From the applicable record in the Planning Terms and Conditions (tctrm1135m000) session, ERP LN retrieves the values of the **Supply Planning by Supplier** check box.

4. If the **Supply Planning by Supplier** check box is selected, ERP LN sets the **VMI Role** field to **Customer**.

Chapter 2
Setup and procedure

2

This chapter describes how to set the system up and how to run the planning. The chapter provides separate instructions for the supplier and the customer.

Supplier side

To perform the supply planning for your customer - Setup

This topic describes how to set the system up to perform the supply planning for your customer in a <u>vendor managed inventory (VMI)</u> situation.

To perform the supply planning for a customer, you must set up the following data:

Step 1: Implemented software components

In the Implemented Software Components (tccom0500m000) details session, set the following fields:

- **VMI (supplier side)**
  To make the supplier side of the <u>vendor managed inventory (VMI)</u> functionality available, select the **VMI (supplier side)** check box.

Step 2: Cluster

In the Clusters (tcemm1135m000) session, define a <u>cluster</u> that represents your customer's site.

Set the following fields to the appropriate values:

- **External**
  To associate this cluster with a <u>sold-to business partner</u>, select the **External** check box.

- **Sold-to Business Partner**
  Enter the customer for which you perform the supply planning in the **Sold-to Business Partner** field.
- **Ship-to Business Partner**
  Optionally specify the ship-to business partner that represents the customer site where the items must be delivered.

Step 3: Warehouse

In the Warehouses (whwmd2500m000) session, define the warehouse at the customer's site.

Set the following fields to the appropriate values:

- **Include in Enterprise Planning**
  To have the planning process take the inventory in this warehouse into account, select the **Include in Enterprise Planning** check box.
- In the **Distribution Cluster** field, enter the cluster you defined in the previous step.

Note: If you will be managing the inbound and outbound operations in this warehouse, you must also select the **Inventory Management** check box.

Step 4: Terms and conditions agreement

In the Terms and Conditions (tctrm1100m000) session, define a the terms and conditions agreement of type **Sales**. For further instructions, refer to To set up terms and conditions.

To make the planning-related parameters in the terms and conditions group available, in the Terms and Conditions Search Level - Lines (tctrm1610m000) session, select the **Planning** check box.

After you set up a basic terms and conditions line, start the Terms and Conditions Line (tctrm1620m000) session, click the **Planning** tab, and enter a record. Set the fields to the appropriate values

- **Responsible for Supply Planning**
  To specify that you perform the supply planning for your customer, select the **Responsible for Supply Planning** check box.
- **Forecast**
  For instructions on the fields under **Forecast**, refer to *Forecast (VMI) (p. 3-1)* .
- **Inventory Levels**
  For instructions on the fields under **Inventory Levels**, refer to *To work with minimum and maximum inventory (p. 7-1)* .

- **Confirmed Forecast**
  For instructions on the fields under **Confirmed Forecast**, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* and *How to set up confirmed forecast (supplier side) (p. 3-8)* .

- **Confirmed Supply**
  For instructions on the fields under **Confirmed Supply**, refer to *Confirmed supply (VMI) (p. 4-1)* .

- **Planning**
  For instructions on the fields under **Planning**, refer to *Replenishment methods (VMI) (p. 6-1)* and *Planning methods (VMI) (p. 5-1)* .

Step 5: Sales contract

In the Sales Contracts (tdsls3500m000) session, define a sales contract between you and your customer.

Set the following fields to the appropriate values:

- **Terms and Conditions ID**
  Enter the terms and conditions agreement defined in the previous step in the **Terms and Conditions ID** field.

Step 6: EP Parameters

In the EP Parameters (cprpd0100m000) details session, set the following fields:

- **Number of Revisions**
  To specify the number of revisions of the forecast and confirmed supply that ERP LN stores, use the **Number of Revisions** field.

- **Automatic Accept Forecast**
  To specify whether you accept all forecast messages without checking, use the **Automatic Accept Forecast** check box.

Step 7: Plan items

In the Items - Planning (cprpd1100m000) session, define plan item that represents the item inventory at your customer's site. for the item you deliver to your customer. In the plan item's cluster segment, enter the cluster your defined in step 2.

Set the following fields to the appropriate values:

- **Default Supply Source**
  To supply the item by using planned distribution orders, set the **Default Supply Source** field to **Distribution**.

  To supply the item by using direct delivery from your suppliers to your customer, set the **Default Supply Source** field to **Production/Purchase**.

- **Default Warehouse**
  Enter the warehouse you defined in step 3 in the **Default Warehouse** field.
- **VMI Role**
  If you run the planning process, ERP LN automatically sets the **VMI Role** field to **Supplier**.

To build up inventory at your own site, define a corresponding plan item that is either a nonclustered item, or has a cluster that is associated with the site from where you deliver the item.

Step 8: Supplying relationships

In the Supplying Relationships (cprpd7130m000) session, define the supplying relationship from your site to your customer's site.

Note: If you use direct delivery or manual replenishment, you do not require supplying relationships.

For more information on the use of multicompany distribution orders to supply your customer, refer to To transfer multicompany distribution orders.

To perform the supply planning for your customer - Procedure

This topic describes the supplier's side of the procedure for planning an item for a customer, starting with the receipt of a forecast, and up to the replenishment of the inventory at the customer's site.

For an overview of the plan during all steps of the procedure, use the Item Customer Plan (cpvmi0520m000) session.

Supply planning for your customer

This is a description of the most comprehensive variant of the procedure. Depending on the parameter setting, you can skip certain steps.

Step 1: Forecast by Revision from Customer (cpvmi0506m100)

If in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab, the **Forecast received from Customer** check box is selected in the relevant terms and conditions agreement, your customer sends you messages that contain the forecast.

If your customer sends you another revision of the forecast, you can use the Forecast by Revision from Customer (cpvmi0506m100) session to inspect this revision.

To enter forecast data received by fax or mail, use the Forecast from Customer (cpvmi0107m000) session. (Usually, however, the forecast is received automatically in ERP LN by electronic messaging).

Step 2: Accept Forecast from Customer (cpvmi0206m000)

Until you accept a forecast revision, the planning process does not take the revision into account.

To accept the forecasts, use one of the following methods:

- To accept all received forecast automatically without checking, in the EP Parameters (cprpd0100m000) session, select the **Automatic Accept Forecast** check box.

- To accept the forecast for a range of items, use the Accept Forecast from Customer (cpvmi0206m000) session. To exclude revisions that do not comply with the agreed <u>frozen zone-</u> or <u>frozen zone+</u>, clear the **Accept Forecast changes in Frozen Zone** check box.

- To accept a forecast for one particular item, start the Forecast by Revision from Customer (cpvmi0506m100) session, find the item and the revision, and click **Accept Forecast**. If the revision does not comply with the agreed <u>frozen zone-</u> or <u>frozen zone+</u>, ERP LN asks you whether you accept the deviations.

If in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab, the **Confirm Supply** check box is cleared in the relevant <u>terms and conditions agreement</u>, skip the following steps and proceed with step 7, Generate Order Planning (cprrp1210m000).

Step 3: Generate Planned Supply based on Forecast (cpvmi1211m000)

If in the Terms and Conditions Line (tctrm1620m000) session, the **Confirm Supply** check box is selected, generate <u>planned orders</u> for <u>plan items</u> for your customer by using the Generate Planned Supply based on Forecast (cpvmi1211m000) session.

Note: The cluster <u>segment</u> of the item code must be the <u>cluster</u> associated with the warehouse located at your customer's site. The **VMI Role** field in the Items - Planning (cprpd1100m000) session must be **Supplier**.

Step 4: Generate Confirmed Supply (cpvmi1210m000)

If in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab, the **Confirm Supply** check box is selected in the relevant <u>terms and conditions agreement</u>, you must send the customer messages that contain the <u>confirmed supply</u>.

To generate the confirmed supply, use the Generate Confirmed Supply (cpvmi1210m000) session. ERP LN bases the confirmed supply on the <u>planned orders</u> generated in the previous step.

Step 5: Confirmed Supply to Customer (cpvmi0108m000)

To check and adjust the confirmed supply manually, use the Confirmed Supply to Customer (cpvmi0108m000) session.

The **Confirm Supply Time Fence** field in the Planning Terms and Conditions (tctrm1135m000) session determines for how many days you must guarantee the deliveries specified in the confirmed-supply message.

Step 6: Approve Confirmed Supply to Customer (cpvmi0208m000)

After you approve the confirmed supply, ERP LN sends the confirmed-supply message to the customer.

To approve the confirmed supply, use one of the following methods:

- To approve the confirmed supply for a range of items, use the Approve Confirmed Supply to Customer (cpvmi0208m000) session. Specify which checks the session must apply before approving the confirmed supply.
- To approve the confirmed supply for one particular item, start the Confirmed Supply to Customer (cpvmi0108m000) session, find the item and the revision, and click **Set Approved for Sending**.

Step 7: Generate Order Planning (cprrp1210m000)

After you generated and approved the confirmed demand, you must plan the item supply. To plan the item supply, use the Generate Order Planning (cprrp1210m000) session. The planning process takes the relevant terms and conditions agreement into account. The **Planning Based On** field in the Planning Terms and Conditions (tctrm1135m000) session determines the method to plan the item.

Step 8: Item Customer Plan (cpvmi0520m000)

To view the result of the planning, use the Item Customer Plan (cpvmi0520m000) session.

Step 9: Transfer Planned Orders (cppat1210m000)

To turn planned orders into actual production orders, purchase orders, and warehouse transfers, use the Transfer Planned Orders (cppat1210m000) session. Depending on the value of the **Replenishment Based On** field in the Planning Terms and Conditions (tctrm1135m000) session, some planned orders are marked as **Not to be released** and are blocked from transfer to the execution level.

To review historic data

To display an overview of all stored revisions of forecast and confirmed supply, use the Forecast Revisions from Customer (cpvmi0506m000) session and double-click a revision to display the details.

Customer side

To let your supplier perform the supply planning - Setup

This topic describes how to set the system up if your supplier performs the supply planning for you in a vendor managed inventory (VMI) situation.

If your supplier performs the supply planning, you must set up the following data:

Step 1: Implemented software components

In the Implemented Software Components (tccom0500m000) details session, set the following field:

- **VMI (customer side)**
  To make the customer side of the vendor managed inventory (VMI) functionality available, select the **VMI (customer side)** check box.

Step 2: Warehouse

In the Warehouses (whwmd2500m000) session, define the warehouse where you receive the item.

Set the following field to the appropriate value:

- **Include in Enterprise Planning**
  To have the planning process take the inventory in this warehouse into account, select the **Include in Enterprise Planning** check box.

Note: If your supplier also manages the inbound and outbound operations in this warehouse, you must clear the **Inventory Management** check box.

Step 3: Business partner

In the Business Partners (tccom4500m000) session, define the supplier.

To specify the relevant data for buy-from business partners, click **Buy-from Business Partner** to start the Buy-from Business Partners (tccom4120s000) session.

Step 4: Terms and conditions agreement

In the Terms and Conditions (tctrm1100m000) session, define a the <u>terms and conditions agreement</u> of type **Purchase**. For further instructions, refer to To set up terms and conditions.

To make the planning-related parameters in the <u>terms and conditions group</u> available, in the Terms and Conditions Search Level - Lines (tctrm1610m000) session, select the **Planning** check box.

After you set up a basic <u>terms and conditions line</u>, start the Terms and Conditions Line (tctrm1620m000) session, click the **Planning** tab, and enter a record. Set the fields to the appropriate values

- **Forecast**
  For instructions on the fields under **Forecast**, refer to *Forecast (VMI) (p. 3-1)* .
- **Inventory Levels**
  For instructions on the fields under **Inventory Levels**, refer to *To work with minimum and maximum inventory (p. 7-1)* .
- **Confirmed Forecast**
  For instructions on the fields under **Confirmed Forecast**, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* and *How to set up confirmed forecast (customer side) (p. 3-6)* .
- **Confirmed Supply**
  For instructions on the fields under **Confirmed Supply**, refer to *Confirmed supply (VMI) (p. 4-1)* .
- **Planning**
  For instructions on the fields under **Planning**, refer to *Replenishment methods (VMI) (p. 6-1)* and *Planning methods (VMI) (p. 5-1)* .

Step 5: Purchase contract

In the Purchase Contracts (tdpur3100m000) session, define a <u>purchase contract</u> between you and your supplier.

Set the following fields to the appropriate values:

- **Terms and Conditions ID**
  Enter the <u>terms and conditions agreement</u> defined in the previous step in the **Terms and Conditions ID** field.

Step 6: EP Parameters

In the EP Parameters (cprpd0100m000) details session, set the following fields:

- **Number of Revisions**
  To specify the number of <u>revisions</u> of the <u>forecast</u> and <u>confirmed supply</u> that ERP LN stores, use the **Number of Revisions** field.

- **Automatic Accept Confirmed Supply**
  To specify whether you accept all confirmed-supply messages without checking, use the **Automatic Accept Confirmed Supply** check box.

Step 7: Plan items

In the Items - Planning (cprpd1100m000) session, define the plan item. In general, the plan item's cluster segment must be left empty; the plan item is a nonclustered item.

Set the following fields to the appropriate values:

- **Default Warehouse**
  Enter the warehouse you defined in step 2 in the **Default Warehouse** field.
- **VMI Role**
  If you run the planning process, ERP LN automatically sets the **VMI Role** field to **Customer**.

To let your supplier perform the supply planning - Procedure

This topic describes the customer's side of the procedure for planning an item by a supplier.

Overview

For the customer, the following procedures are relevant:
- Procedure 1: Sending the forecast
- Procedure 2: Receiving the confirmed supply

After you send the forecast and before you receive the confirmed supply, the supplier performs the planning. For a description of the supplier actions, refer to *To perform the supply planning for your customer - Procedure (p. 2-4)* .

To review previous revisions of the forecast and the corresponding confirmed supply, use the Forecast by Revision to Supplier (cpvmi0503m100) session.

For an overview of the plan during all steps of the procedure, use the Item Supplier Plan (cpvmi0530m000) session.

Procedure 1: Sending the forecast

Step 1: Generate Order Planning (cprrp1210m000)

Run the Generate Order Planning (cprrp1210m000) session. The planning process determines the value of the **VMI Role** field in the Items - Planning (cprpd1100m000) session, based on the available VMI suppliers, valid purchase contracts, and terms and conditions agreements. If a plan item's VMI role

is **Customer**, the planning process does not generate planned orders for that item, because the supplier takes care of the supply planning.

If in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab, the **Send Forecast to Supplier** check box is selected in the relevant terms and conditions agreement, the planning process generates a forecast for the item.

Step 2: Forecast to Supplier (cpvmi0102m000)

To check and adjust the forecast manually, use the Forecast to Supplier (cpvmi0102m000) session.

Make sure the forecast complies with the frozen zone- and frozen zone+ specified in the relevant terms and conditions agreement.

Step 3: Approve Forecast to Supplier (cpvmi0202m000)

After you approve the forecast, ERP LN sends the forecast message to the supplier.

To approve the forecast, use one of the following methods:

- To approve the forecast for a range of items, use the Approve Forecast to Supplier (cpvmi0202m000) session. Specify which checks the session must apply before approving the forecast.
- To approve the forecast for one particular item, start the Forecast to Supplier (cpvmi0102m000) session, and click **Set Approved for Sending**.

Procedure 2: Receiving the confirmed supply

Step 1: Forecast by Revision to Supplier (cpvmi0503m100)

If in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab, the **Use Confirmed Supply** check box is selected in the relevant terms and conditions agreement, your supplier sends you messages that contain the confirmed supply.

When you receive a confirmed-supply message, you can use the Forecast by Revision to Supplier (cpvmi0503m100) session to inspect this revision of the confirmed supply.

To enter confirmed supply received by fax or mail, use the Confirmed Supply from Supplier (cpvmi0105m000) session. (Usually, however, the confirmed supply is received automatically in ERP LN by electronic messaging.)

To display an overview of all stored revisions, use the Forecast Revisions to Supplier (cpvmi0503m000) session.

Step 2: Accept Confirmed Supply from Supplier (cpvmi0205m000)

Until you accept a confirmed-supply revision, the planning process does not take that revision into account.

To accept the confirmed supply, use one of the following methods:

■   To accept all received confirmed supply automatically without checking, in the EP Parameters (cprpd0100m000) session, select the **Automatic Accept Confirmed Supply** check box.

■   To accept the confirmed supply for a range of items, use the Accept Confirmed Supply from Supplier (cpvmi0205m000) session. Specify which checks the session must apply before accepting the confirmed supply.

■   To accept the confirmed supply for one particular item, start the Forecast by Revision to Supplier (cpvmi0503m100) session, and click **Accept Confirmed Supply**. If any planned receipt date is before the current date, or the delivery dates do not match the agreed pattern, ERP LN asks you whether you accept the deviations.

Step 3: Item Supplier Plan (cpvmi0530m000)

To view the result of the planning that the supplier performed, use the Item Supplier Plan (cpvmi0530m000) session.

To review historic data

To display an overview of all stored revisions of forecast and confirmed supply, use the Forecast Revisions to Supplier (cpvmi0503m000) session and double-click a revision to display the details.

Chapter 3
Forecast

<div style="text-align: right">3</div>

Forecast (VMI)

A forecast in a <u>vendor managed inventory (VMI)</u> setup is the demand for an item, calculated by the customer that purchases that item, and aggregated to forecast periods according to the agreed terms and conditions. The customer sends the forecast to the supplier that plans the item supply.

> **Note**
>
> For information on the <u>demand forecasting</u> process that you use to estimate future demand based on historic sales data, refer to Demand forecasting in Enterprise Planning. These two subjects are unrelated.

Life-cycle of forecast data

During an <u>order-based planning</u> run, Enterprise Planning generates <u>planned production orders</u>, <u>planned purchase orders</u>, and <u>planned distribution orders</u> to fill the demand. However, if a plan item is purchased from a <u>VMI supplier</u>, Enterprise Planning does not generate <u>planned orders</u> for that item. Enterprise Planning generates a <u>forecast</u> instead of planned orders.

The customer sends the forecast to the supplier.

The supplier uses the forecast to plan the supply and optionally to calculate the <u>confirmed supply</u>.

Terms and conditions

To use <u>vendor managed inventory (VMI)</u>, the supplier and the customer must define a <u>terms and conditions agreement</u>, which is stored in the Terms and Conditions module in the Common Data package. A terms and conditions agreement is linked to a contract. The supplier stores this contract as a <u>sales contract</u> and the customer stores the contract as a <u>purchase contract</u>.

For more information, refer to Overview of terms and conditions.

Aggregation period

Generally, the customer aggregates the forecast to <u>forecast periods</u>, such as, one day, one week, or five weeks. The terms and conditions agreement defines the forecast periods' length.

Example

If the forecast period is a week, the forecast message for item X can specify the following data:

Period	Forecast
Week 20	350 piece
Week 21	410 piece
Week 22	360 piece

Approval

After ERP LN calculated the forecast, the customer can optionally change the forecast manually. Before ERP LN sends the forecast to the supplier, the customer must approve the data.

After a forecast revision has been approved, you can no longer change that forecast revision.

Revisions

The customer can send as many forecast messages as desired. Every revised forecast message gets a <u>revision number</u> that is incremented by one. You can specify whether and how many previous revisions must be stored for future reference.

If the supplier sends a <u>confirmed-supply</u> message to the customer, that message contains the revision number of the corresponding forecast revision, that is, the forecast revision on which the confirmed supply was based.

Forecast frozen zone

Supplier and customer can agree that the forecast for the immediate future cannot be increased or decreased. This restriction ensures that the supplier has sufficient time to adapt the supply plan if required.

For more information, refer to *Forecast frozen zones (p. 3-11)* .

Total forecast and confirmed part of the forecast

Optionally, you can split the forecast in confirmed forecast and unconfirmed forecast. The supplier can use this information in several ways. For example, the supplier can base its internal production plans on the total forecast, and replenish the customer based on the confirmed forecast.

When more sales information becomes available and the customer sends new forecast revisions, the unconfirmed forecast can be gradually replaced by confirmed forecast.

For more information, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* .

Supplier actions

Before the supplier uses the received forecast in the planning process, the supplier must accept the forecast. Optionally, you set the system up to automatically accept all forecasts.

The supplier can use the forecast for the following purposes:

- To calculate the confirmed supply, which is subsequently sent to the customer.
- To generate planned orders to supply the item at the supplier's warehouse.
- To generate the planned distribution orders to replenish the customer's warehouse.

For more information, refer to *Planning methods (VMI) (p. 5-1)* .

Confirmed forecast

Confirmed forecast and unconfirmed forecast

This topic discusses the concept of confirmed and unconfirmed forecast, and presents an overview of the functionality.

For instructions on setting up the various options, refer to the following topics:

- *How to set up confirmed forecast (customer side) (p. 3-6)*
- *How to set up confirmed forecast (supplier side) (p. 3-8)*

For a description of the algorithm to determine which part of the total forecast is confirmed forecast, refer to *How to determine the confirmed forecast (p. 3-5)*

Reliability of the forecast to supplier

If you use vendor managed inventory (VMI) and the supplier plans the supply on behalf of the customer, the supplier can plan based on forecast received from the customer.

The customer can differentiate between confirmed and unconfirmed forecast:

- **confirmed forecast**
  The part of the total forecast for which the customer definitely expects a supply.

  Typically, confirmed forecast is derived from actual sales orders, sales schedules, and so on, including dependent demand.

- **unconfirmed forecast**
  The part of the total forecast for which the customer wants a supply in addition to the confirmed forecast. Possibly, the customer is unsure whether this quantity will be needed.

The sum of the confirmed forecast and the unconfirmed forecast is called *total forecast*. Usually, the total forecast includes the demand based on actual sales orders for the customer's end products and forecast demand based on estimated future sales.

To use unconfirmed forecast

If you differentiate between confirmed forecast and unconfirmed forecast, the supplier can choose whether the supply planning is based on the confirmed forecast or on the total forecast.

With confirmed supply

If the VMI supplier sends the customer messages with the confirmed supply that the customer can expect to receive, the supplier can calculate the confirmed supply based on **Total Forecast** or **Confirmed Forecast**.

In both cases, the supplier bases the supply planning on the confirmed supply.

Without confirmed supply

If the supplier does not send the customer messages with the confirmed supply that the customer can expect to receive, the supplier can base the supply planning on **Total Forecast** or **Confirmed Forecast**.

If the planning is based on **Total Forecast**, the supplier can base the replenishment on **Total Forecast**, **Confirmed Forecast**, or **Inventory Level**. If the planning is based on **Confirmed Forecast**, the replenishment can be based on **Confirmed Forecast** or **Inventory Level**.

Item supplier plan and item customer plan

In the item supplier plan and the item customer plan, ERP LN displays the **Total Demand** field and the **Confirmed Demand** field in adjacent columns. ERP LN also displays the **Planned Avail. (Total)** and the **Planned Available (Confirmed)** fields, which show whether the supplier can prevent inventory shortages. A negative planned available quantity indicates a projected inventory shortage.

If the VMI supplier cannot fill the total forecast, the item plans shows whether the supplier can at least cover the confirmed forecast.

How to determine the confirmed forecast

This topic describes how to set up the algorithm to determine which part of the total forecast is confirmed forecast and which part is unconfirmed forecast.

The general concept is explained in the *Confirmed forecast and unconfirmed forecast (p. 3-3)* topic.

Two available methods

If you are the customer that sends forecasts to a VMI supplier, you can choose between two approaches to distinguish confirmed forecast from unconfirmed forecast:

- **Based on Order Type**
  You can define a collection of sources of demand, such as, **Sales Order**, **Maintenance Sales Order**, and so on, you consider to be *confirmed demand*. All other sources of demand are automatically considered *unconfirmed demand*. The part of the component forecast pegged to confirmed end-item demand is confirmed forecast.

- **Based on First Periods**
  You can define the first few forecast periods as confirmed forecast. For example, you can define that all demand forecast for the first 4 weeks is considered confirmed forecast, and all demand forecast for the longer-term future is considered unconfirmed forecast.

These approaches are further explained in the following sections.

Confirmed forecast based on order type

If the distinction between confirmed and unconfirmed forecast is based on order type, the customer must determine which part of the forecast is considered confirmed forecast. The customer can specify which types of orders are confirmed forecast in the Propagate as Confirmed Demand (cpvmi0101m000) session. The independent demand and dependent demand originating from these order types are considered confirmed forecast. For an example calculation, refer to the Help of the **Base Confirmed Forecast on** field.

Then, the customer can pass this information on to the supplier as additional information in the messages that communicate the forecast from customer to supplier.

Note

- The customer can ignore the order types and proceed as if *all* of the forecast is confirmed forecast, or proceed as if *none* of the forecast is confirmed forecast.
- The customer can manually modify the values of the confirmed forecast and the unconfirmed forecast before the customer sends the forecast to the supplier.

Confirmed forecast based on first periods

If you base the definition of confirmed forecast on the distinction between the demand for the near future and demand for the far future, use one of the following methods:

- In the forecast message the customer sends to the supplier, the customer indicates which forecast is confirmed forecast and which forecast is unconfirmed forecast.
- The number of periods in which the forecast quantities are considered to be confirmed forecast is defined in the terms and conditions agreement. The customer does not send any additional information to the supplier.

Note

The terms and conditions agreement can also specify that *all* forecast is considered confirmed forecast.

How to set up confirmed forecast (customer side)

This topic contains instructions to set up functionality for confirmed forecast and unconfirmed forecast for the customer in a vendor managed inventory (VMI) situation.

For an overview of the various options, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* .

Basic setup

To enable the use of confirmed and unconfirmed forecast, first set up the relevant terms and conditions agreement; for instructions on how to do this, refer to To set up terms and conditions.

All the fields and check boxes mentioned in this topic are located in the Planning Terms and Conditions (tctrm1135m000) session, unless otherwise specified.

To specify that your supplier plans the supply, select the **Supply Planning by Supplier** check box.

To make a distinction between confirmed forecast and unconfirmed forecast, select the **Use Confirmed Forecast** check box.

You can use two methods to set up confirmed forecast:

- Based on **Order Type**.
- Based on **First Periods**.

To set up confirmed forecast based on order type

To set up confirmed forecast based on order type, use the following settings:

Field	Value
Use Confirmed Forecast	**Yes** (check box selected)
Specify Confirmed Forecast by	**Message**
Base Confirmed Forecast on	**Confirmed End Item Demand**

In the Propagate as Confirmed Demand (cpvmi0101m000) session, specify which types of orders are considered to result in confirmed forecast.

Important!

To ensure that the messages are interpreted correctly, the supplier and the customer must choose values of the **Confirmed Forecast in Message** field that match.

Note

To ignore the order types and proceed as if *all* of the forecast is confirmed forecast, set the **Base Confirmed Forecast on** field to **All Forecast**. To proceed as if *none* of the forecast is confirmed forecast, set the **Base Confirmed Forecast on** field to **None**.

To set up confirmed forecast based on first periods

To indicate for each period whether the forecast in that period is confirmed forecast, use the following settings:

Field	Value
Use Confirmed Forecast	**Yes** (check box selected)
Specify Confirmed Forecast by	**Message**
Base Confirmed Forecast on	**First Periods**
Number of Periods	The number of periods in a demand forecast message that must be marked as confirmed forecast.

To define the number of periods in which the forecast quantities are considered to be confirmed demand in the <u>terms and conditions agreement</u>, use the following settings:

Field	Value
Use Confirmed Forecast	**Yes** (check box selected)
Specify Confirmed Forecast by	**Terms and Conditions**
Interpret Confirmed Forecast	**First Periods**
Number of Periods	The number of periods in a demand forecast message interpreted as confirmed forecast.

> **Note**
>
> To specify that all forecast is considered confirmed forecast, set the **Interpret Confirmed Forecast** field to **All Forecast**.

How to set up confirmed forecast (supplier side)

This topic contains instructions to set up functionality for <u>confirmed forecast</u> and <u>unconfirmed forecast</u> for the supplier in a <u>vendor managed inventory (VMI)</u> situation.

For an overview of the various options, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* .

Basic setup

To enable the use of confirmed and unconfirmed forecast, first set up the relevant terms and conditions agreement. For instructions on how to do this, refer to To set up terms and conditions.

All the fields and check boxes mentioned in this topic are located in the Planning Terms and Conditions (tctrm1135m000) session, unless otherwise specified.

To specify that you plan the supply for your customer, select the **Responsible for Supply Planning** check box.

If the customer makes a distinction between confirmed forecast and unconfirmed forecast, select the **Use Confirmed Forecast** check box.

Your customer can use two methods to communicate the confirmed forecast:

- In the forecast messages, by using an indicator for confirmed forecast or specifying a quantity of confirmed forecast.
- In the terms and conditions agreement.

Confirmed forecast sent in forecast message

If your customer sends the confirmed forecast in the forecast message, use the following settings:

Field	Value
Use Confirmed Forecast	**Yes** (check box selected)
Specify Confirmed Forecast by	**Message**

For more information and examples, refer to the Help of the **Confirmed Forecast in Message** field.

Confirmed forecast based on terms and conditions

To define the number of periods in which the forecast quantities are considered to be confirmed demand in the terms and conditions agreement, use the following settings:

Field	Value
Use Confirmed Forecast	**Yes** (check box selected)
Specify Confirmed Forecast by	**Terms and Conditions**
Interpret Confirmed Forecast	**First Periods**
Number of Periods	The number of periods in a demand forecast message interpreted as confirmed forecast.

Note

To specify that all forecast is considered confirmed forecast, set the **Interpret Confirmed Forecast** field to **All Forecast**.

The use of the confirmed forecast

You can use the confirmed forecast to calculate the confirmed supply that you communicate with your customer. If you do not calculate a confirmed supply, you can use the confirmed forecast to plan the supply and to optionally determine the replenishment plan as well.

To base the confirmed supply on confirmed forecast

To base the confirmed supply on confirmed forecast, use the following settings:

- Select the **Confirm Supply** check box.
- Set the **Confirmed Supply Based On** field to **Confirmed Forecast**.

To plan or replenish based on confirmed forecast

The following fields determine how you plan and replenish the supply:

- The **Planning Based On** field.
- The **Replenishment Based On** field.

The allowed values of these fields depend on the settings of many other fields. For more information on these fields, refer to the Help of the **Planning Based On** field and the **Replenishment Based On** field.

To plan the supply based on confirmed forecast, set the **Planning Based On** field to **Confirmed Forecast**.

To replenish the item based on confirmed forecast, set the **Planning Based On** field and **Replenishment Based On** field to **Confirmed Forecast**.

Frozen zones

Forecast frozen zones

This topic describes how to prevent undesirable changes in the forecast for the short-term future.

Prevention of short-term changes in the forecast

In a vendor managed inventory (VMI) situation, if a supplier plans the supply for the customer, the supplier relies on the forecast received from the customer. If the customer changes the forecast for the near future, the supplier can become unable to adjust the plan in time.

The following types of problem can occur:

- If the customer sends a new revision of the forecast, in which the forecast is suddenly increased, it is possible that the supplier cannot adapt the production level in time, because the supplier's lead times are too long.
- If the customer suddenly decreases the forecast, it is possible that the supplier is left with a high inventory of unused components and subassemblies.

To prevent these problems, customer and supplier can agree on a time period in which the customer is not permitted to increase or decrease the forecast; you define this time period in a terms and conditions agreement.

Note

ERP LN does not strictly enforce these limits. You can manually override the restrictions.

To set up frozen zones

The frozen zone is defined in the **Frozen Zone -** field and the **Frozen Zone +** field in the Planning Terms and Conditions (tctrm1135m000) session. The supplier and customer must both define these fields.

The **Frozen Zone -** field restricts the customer's freedom to decrease a forecast.

The **Frozen Zone +** field restricts the customer's freedom to increase a forecast.

Both parameters are defined as a number of calendar days from the current date.

Example

The supplier wants to be informed about decreasing demand at least 14 days in advance. The supplier wants to be informed about increasing demand at least 21 calendar days in advance.

To achieve this restriction, the supplier and the customer must set the **Frozen Zone -** field to 14, and the **Frozen Zone +** field to 21.

For detailed calculation examples, refer to *Forecast frozen zone calculation (p. 3-12)* .

To use the frozen zone restrictions

Customer side

To have ERP LN compare the forecast to the previously sent revision, click **Set Approved for Sending** in the Forecast to Supplier (cpvmi0102m000) session. If the forecast has been increased in the frozen zone+, or decreased in the frozen zone-, the system asks whether you want to approve the revision.

To determine what ERP LN must do if a forecast was changed in the frozen zone, use the **Accept Forecast changes in Frozen Zone** check box in the Approve Forecast to Supplier (cpvmi0202m000) session.

If you approve a forecast that violates the frozen-zone restrictions, the supplier might refuse to approve your forecast.

Supplier side

To have ERP LN compare the received forecast to the previously received revision, click **Approve** in the Forecast Revisions from Customer (cpvmi0506m000) session. If the forecast has been increased in the frozen zone+, or decreased in the frozen zone-, the system asks whether you want to approve the revision.

Note

To determine the last day of the frozen zone, ERP LN uses the date on which you received the forecast as a reference.

To determine what ERP LN must do if a forecast was changed in the frozen zone, use the **Accept Forecast changes in Frozen Zone** check box in the Accept Forecast from Customer (cpvmi0206m000) session.

Forecast frozen zone calculation

This topic describes how ERP LN checks whether changes to the forecast occur inside the frozen zone- or the frozen zone+, compared to the previously sent revision.

For a general overview of the frozen-zones functionality, refer to *Forecast frozen zones (p. 3-11)* .

Calculation details

The details of the calculation of the frozen zones are as follows:

- ERP LN retrieves the frozen zones from the **Frozen Zone +** field and the **Frozen Zone -** field in the Planning Terms and Conditions (tctrm1135m000) session.

  To select the relevant version of the <u>terms and conditions agreement</u>, ERP LN takes the start date of the first period after the current date as the effective date.

- On the customer side, to obtain the end of the frozen zone *plus*, ERP LN adds the number of days from the **Frozen Zone +** field to the current date. In the same way, ERP LN calculates the frozen zone *minus* by using the value of the **Frozen Zone -** field. On the supplier side, ERP LN performs a similar calculation, but ERP LN uses the receipt date of the forecast instead of the current date.

  ERP LN does not calculate this date against any specific calendar; all calendar days are counted.

- ERP LN checks the forecast against the forecast in the previously sent revision. If no earlier revision is present, ERP LN presumes the previous forecast zero (0).

- ERP LN adds the forecast before the current date to the first period after the current date.

  Similarly, for the previously sent revision, ERP LN adds the forecast before the date that revision was sent to the first period after the date sent.

- If the current forecast and preceding revision of the forecast have the same number of periods, and the start dates of these periods are the same, ERP LN performs the frozen-zone check separately for each period. Otherwise, ERP LN uses the sum of the forecasts of all periods within the horizon and only checks the totals.

- If the forecast increases in the <u>frozen zone+</u>, compared to the previous revision, or if these values decrease in the <u>frozen zone-</u>, the system concludes that the frozen-zone restrictions have been violated.

These checks are always initiated from the sessions where you approve a forecast. ERP LN can respond in various ways to a failed frozen-zone check. For more information, refer to *To use the frozen zone restrictions (p. 3-12)* .

Example

In the following example, the <u>frozen zone+</u> and the <u>frozen zone-</u> are *20 days*.

Period	Period Start Date	Forecast Revision 1	Current Forecast	
				The current date falls in period 2 and the horizon falls in period 5; therefore, ERP LN checks periods 3, 4, and 5.

1	April 2	15	15
2	April 9	20	20
3	April 16	20	25
4	April 23	20	15
5	April 30	20	20
6	May 7	25	25
7	May 14	25	50
8	May 21	25	20

Forecast revision 1 sent	April 10	Period 2
Current date	April 13	Period 2
Horizon	May 3	Period 5

Characteristic dates

ERP LN adds the forecast of periods 1 and 2 to period 3, because the date sent of revision 1 and the current date are in period 2.

For forecast revision 1, the forecast for period 3 becomes 55 (15+20+20). For the current forecast, the forecast for period 3 becomes 60. That increase is not permitted in the frozen zone plus.

Suppose the customer adjusts the current forecast of period 3 from 60 to 55, and tries again. Now, period 3 passes the test, but period 4 shows a decrease from 20 to 15, and the frozen-zone-minus check fails.

Period 5 is accepted.

Period 6 is not checked, because that period is beyond the frozen-zone horizon.

Example

In following example, the frozen zone+ and the frozen zone- are *20 days*.

Period	Period Start Date	Forecast Revision 1	Current Forecast
1	April 2	15	
2	April 9	20	
3	April 16	20	5
4	April 23	20	15
5	April 30	20	20
6	May 7	25	25

The current date falls in period 3; therefore, ERP LN checks periods 4, 5, and 6.

For forecast revision 1, ERP LN adds the forecast of periods 1 and 2 to period 3, because the date sent of revision 1 is in period 2. However, period 3 does not need to be checked.

For the current forecast, ERP LN adds the forecast of period 3 to period 4, because the current date is in period 3.

For the current forecast, the forecast for period 4 becomes 20 (5+15). This value equals the forecast

| 7 | May 14 | 25 | 60 |
| 8 | May 21 | 25 | 30 |

of period 4 in forecast revision 1. Therefore, period 3 does not need to be checked.

Period 5 and 6 are also accepted.

Forecast revision 1 sent	April 10	Period 2
Current date	April 19	Period 3
Horizon	May 9	Period 6

Characteristic dates

Chapter 4
Confirmed supply

4

Confirmed supply (VMI)

A <u>VMI supplier</u> can send confirmed-supply messages to the customer. The confirmed supply is the quantity of the item the supplier has confirmed will be delivered to the customer on the planned delivery date. The confirmed supply can be less than the quantity requested by the customer.

Purpose of confirmed-supply data

The confirmed-supply data can serve two purposes:

- If the **Confirm Supply** check box in the Planning Terms and Conditions (tctrm1135m000) session is selected, you communicate the confirmed supply to the customer.
- If the **Planning Based On** field is **Confirmed Supply**, ERP LN uses the confirmed supply to generate <u>planned orders</u> to supply the customer.

Life cycle of confirmed-supply data

The life-cycle of confirmed supply consists of the following stages:

1. The supplier generates planned supply orders for an item based on the received <u>forecast</u>.
2. The <u>VMI supplier</u> converts the planned supply orders and actual supply orders to confirmed supply.
3. Optionally, the supplier adjusts the confirmed supply, for example if a limited production capacity or shortage of components makes it impossible to execute all planned orders.

   Alternatively, the supplier enters the confirmed supply manually.
4. The supplier approves the confirmed supply and sends the confirmed supply to the customer.

After the confirmed supply has been approved, you can no longer change the confirmed supply for that <u>revision number</u>.

The procedure is controlled in detail by the <u>terms and conditions agreement</u> defined by the supplier and the customer. For more information, refer to Overview of terms and conditions.

Aggregation period

The confirmed supply is defined by period, such as a day or a week. These periods are identical to the <u>forecast periods</u>, defined in the terms and conditions.

Confirm Supply Time Fence

Before the date specified by the confirmed supply time fence, the confirmed supply in a <u>forecast period</u> period cannot be lower than the previous value of the confirmed supply in that forecast period. You specify the confirmed supply time fence in the **Confirm Supply Time Fence** field in the Planning Terms and Conditions (tctrm1135m000) session.

Customer actions

The customer can view the confirmed supply in the <u>item supplier plan</u>. This data can also be used to calculate the <u>available-to-promise</u> (ATP) quantity and to perform <u>component CTP checks</u>.

Confirmed supply type

This topic contains the following information:

- How must the confirmed supply type of a <u>confirmed-supply</u> record be interpreted?
- How does ERP LN determine the confirmed supply type?

If you are the supplier in a <u>vendor-managed-inventory (VMI)</u> setup, ERP LN can use the <u>confirmed supply</u> to plan the supply for a customer.

You can view and modify the a confirmed-supply record's type in the **Confirmed Supply Type** field in the Confirmed Supply to Customer (cpvmi0108m000) session.

Allowed values

A confirmed-supply record's type determines how that confirmed supply is handled:

- **Stock**
  Supply of type **Stock** is already present at the customer; so, you do not need to generate <u>planned distribution orders</u> to deliver the supply.

- **Immediate**
  Supply of type **Immediate** is used to increase the inventory level to at least the agreed minimum inventory level.

  <u>Planned distribution orders</u> that result from this confirmed supply can be immediately transferred to the <u>execution level</u>.

- **To Release**
  If planned distribution orders are based on confirmed supply of type **To Release**, these orders get the **Order Release** field set to **To be released**. These planned orders can be immediately transferred to the execution level.

- **Planned**
  If planned distribution orders are based on confirmed supply of type **Planned**, these orders get the **Order Release** field set to **Not to be released**. These planned orders cannot be transferred to the execution level until the **Order Release** field is changed to **To be released** in a later planning run or manually.

- **Released**
  If a confirmed-supply record has confirmed supply type **Released**, the confirmed supply has already been covered by an actual order. This actual order corresponds with a scheduled receipt for the customer's warehouse.

Note

If you transfer a <u>planned distribution order</u> to the execution level, the planned order results in a <u>warehousing order</u> with <u>inventory transaction type</u> **Transfer**. Theoretically, a planned distribution order can also be transferred to a <u>sales order</u>, but that is not useful in a vendor-managed-inventory (VMI) setup.

How the confirmed supply type is determined

The confirmed supply type depends on the **Replenishment Based On** field in the Planning Terms and Conditions (tctrm1135m000) and the **Order Release** field in the Planned Orders (cprrp1100m000) session.

Chapter 5
Planning methods

This chapter describes which planning methods a supplier can use.

Planning methods (VMI)

This topic describes the options for a VMI supplier to plan the supply for a customer.

This topic is especially useful for the supplier in a vendor managed inventory (VMI) situation; some of the information also applies to the customer.

Available methods

To specify the planning method, use the **Planning Based On** field on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

The following table describes the available settings.

Planning Based On	Description	Further information
Total Forecast	ERP LN plans the supply based on the total forecast, received in messages from the customer.	*VMI planning based on forecast (p. 5-2)*
Confirmed Forecast	Similar to **Total Forecast**, but ERP LN only takes the confirmed part of the forecast into account.	*VMI planning based on forecast (p. 5-2)*
Confirmed Supply	You determine a confirmed supply that you communicate to your customer. You can base the confirmed supply on the total forecast or the confirmed forecast, and optionally adjust the confirmed	*VMI planning based on con-*

	supply manually. ERP LN plans the supply based on the confirmed-supply data.	*firmed supply (p. 5-3)*
Inventory Level	ERP LN plans the supply based on the agreed <u>minimum inventory levels</u>.	*VMI planning based on minimum inventory levels (p. 5-5)*
Manual	No planning takes place.	

> **Note**
>
> The value of the **Replenishment Based On** field determines which values of the **Planning Based On** field are available. For details on the possible combinations of the **Planning Based On** field and **Replenishment Based On** field, refer to *Replenishment methods (VMI) (p. 6-1)* .

VMI planning based on forecast

This topic describes how a <u>VMI supplier</u> can plan the supply for a customer based on the <u>forecast</u> received from the customer.

For an introduction to the various planning methods, refer to *Planning methods (VMI) (p. 5-1)* .

General planning procedure

If the VMI planning is based on forecast, the general planning procedure is as follows:

- Your customer sends you a <u>forecast</u>.
- ERP LN uses the values of the forecast to generate <u>planned orders</u> to fill the customer warehouse. Most of these planned orders are <u>planned distribution orders</u>. In case of <u>direct delivery</u>, ERP LN generates <u>planned purchase orders</u>.

  The planned orders are based on either the total forecast or on the <u>confirmed part of the forecast</u>.

> **Note**
>
> In this procedure, you do not determine a <u>confirmed supply</u>.
>
> For more information, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* .

Parameter setting

To specify this planning method, define an appropriate terms and conditions agreement on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Forecast received from Customer	=	**Yes**
Confirm Supply	=	**No**
Replenishment Based On	=	**Total Forecast**, **Confirmed Forecast**, **Inventory Level**, or **Manual**
Planning Based On	=	**Total Forecast** or **Confirmed Forecast**

> **Note**
>
> The replenishment quantity can never exceed the planned quantity; therefore, if the **Replenishment Based On** field is **Total Forecast**, you cannot set the **Planning Based On** field to **Confirmed Forecast**.

For more information, refer to *Replenishment methods (VMI) (p. 6-1)*

VMI planning based on confirmed supply

This topic describes how a VMI supplier can plan the supply for a customer based on confirmed supply.

For an introduction to the various planning methods, refer to *Planning methods (VMI) (p. 5-1)* .

General planning procedure

If the VMI planning is based on confirmed supply, the general planning procedure is as follows:

1. The customer sends the supplier a forecast for the items for which the supplier handles the supply planning.

2. Based on the forecast, the supplier generates the planned supply for these items in the form of planned orders.

These planned orders are based on either the total forecast or on the <u>confirmed part of the forecast</u>.

3. If necessary, the supplier can move or adjust the planned orders to create a feasible plan.

4. The supplier converts this planned supply and any existing supply orders to <u>confirmed supply</u>.

5. After optional modification, the supplier communicates the confirmed supply to the customer.

6. The supplier uses the values of the confirmed supply to generate <u>planned orders</u>.

Note

You can skip the steps 1 through 4 and manually define the confirmed supply.

In step 3 and step 5, the planner can adjust the planned supply.

Parameter setting

To specify this planning method, define an appropriate <u>terms and conditions agreement</u> on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Responsible for Supply Planning	=	**Yes**
Forecast received from Customer	=	**Yes**
Confirm Supply	=	**Yes**
Confirmed Supply Based On	=	**Total Forecast** or **Confirmed Forecast**
Replenishment Based On	=	**Confirmed Supply**, **Inventory Level**, or **Manual**
Planning Based On	=	**Confirmed Supply**

Note

If you select the **Confirm Supply** check box, the **Planning Based On** field is set to the value **Confirmed Supply** and cannot be modified.

VMI planning based on minimum inventory levels

This topic describes how a VMI supplier can plan the supply for a customer based on the agreed minimum inventory level.

For an introduction to the various planning methods, refer to *Planning methods (VMI) (p. 5-1)* .

General planning procedure

If the VMI planning is based on the agreed minimum inventory level, you do not send your customer confirmed-supply messages. The planning and the replenishment process are entirely based on the inventory levels at the customer's warehouse. If the inventory level drops below the effective minimum inventory level, the supplier supplies the customer. Optionally, you can also take a maximum inventory level into account.

Specification of the minimum inventory level

You can use the following methods to determine the minimum inventory level:

- A fixed level specified in the item data.
- A fixed level agreed between the supplier and customer.
- A time-phased level, agreed between the supplier and customer.
- A time-phased level, based on a forecast that the customer sends to the supplier.

For further details, refer to *To specify the minimum and maximum inventory (p. 7-5)* .

Parameter setting

To specify this planning method, define an appropriate <u>terms and conditions agreement</u> on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Responsible for Supply Planning	=	**Yes**
Forecast received from Customer	=	**Yes** or **No**
Use Min-Max Inventory Levels	=	**Minimum Levels** or **Minimum and Maximum Levels**
Confirm Supply	=	**No**
Replenishment Based On	=	**Inventory Level**
Planning Based On	=	**Inventory Level**

> **Note**
>
> If you set the **Replenishment Based On** field to **Inventory Level**, ERP LN also sets the **Planning Based On** field to the fixed value of **Inventory Level**.

Chapter 6
Replenishment methods

6

This chapter describes which replenishment methods a supplier can use. Note that the choice of replenishment method determines which planning methods are available.

Replenishment methods (VMI)

This topic describes how a VMI supplier can replenish inventory at a customer.

Planning methods and replenishment methods

For the purpose of this description, the terms planning and replenishment are defined as follows:

- **Planning**
  Planning is the process of generating planned orders based on the requirements of the customer, intended to replenish the warehouse at the customer. The same process drives the generation of planned production orders, planned purchase orders, and planned distribution orders used to build up inventory in the supplying warehouse from which the supplier supplies the customer.

- **Replenishment**
  Replenishment is the process of transferring planned distribution orders to the execution level to start the actual delivery of items to the warehouse at the customer's site. In case of direct delivery, you do not use a planned distribution order but a planned purchase order.

The planning method determines how the supplying warehouse is filled; the replenishment method determines the delivery moments and quantities sent to the customer's warehouse.

If you select the same method for the planning and the replenishment, the replenishment closely follows the planning; all planned orders are transferred to the execution level and executed without further delay.

If you use different methods for the planning and the replenishment, some planned orders are not immediately transferred and executed. You can use that setting to build stock at your site as determined by the planning method, but ship the items later, as determined by the replenishment method.

Available methods

To specify the replenishment method, use the **Replenishment Based On** field on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

The following table describes the available settings.

Replenishment Based On	Description	Further information
Total Forecast	ERP LN bases the replenishment on the total forecast, received in messages from the customer.	
Confirmed Forecast	Similar to **Total Forecast**, but ERP LN only takes the confirmed part of the forecast into account.	
Confirmed Supply	You determine a confirmed supply that you communicate to your customer. You can base the confirmed supply on the total forecast or the confirmed forecast, and optionally adjust the confirmed supply manually. ERP LN bases replenishment on the confirmed-supply data.	*VMI planning based on confirmed supply (p. 5-3)*
Inventory Level	ERP LN bases the replenishment on the agreed minimum inventory levels.	*Replenishment based on minimum inventory (p. 6-5)*
Manual	ERP LN does not transfer any planned order. You make deliveries manually, independently from any planned order. When a subsequent planning run takes the actual deliveries into account, the existing planned orders are not generated again.	*To specify the minimum and maximum inventory (p. 7-5)*

Possible combinations of planning method and replenishment method

To specify this planning method, define an appropriate terms and conditions agreement on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

> **Note**
>
> You must enter the **Replenishment Based On** field before you enter the **Planning Based On** field.

The following table displays all permitted combinations of planning method and replenishment method:

		Replenishment Based On				
		Total Forecast	**Confirmed Forecast**	**Confirmed Supply**	**Inventory Level**	**Manual**
Planning Based On	**Total Forecast**	A	B	-	D	E
	Confirmed Forecast	-	A	-	D	E
	Confirmed Supply	-	-	A / C	D	E
	Inventory Level	-	-	-	A / D	-
	Manual	-	-	-	-	F

Legend:

A	=	The **Planning Based On** field has the same value as the **Replenishment Based On** field. The replenishment closely follows the planning. All planned orders are transferred to the <u>execution level</u> and executed without further delay.
B	=	*Planning on total forecast, replenishment on confirmed forecast (p. 6-4)*
C	=	VMI planning and replenishment based on confirmed supply. For more information, refer to *VMI planning based on confirmed supply (p. 5-3)* .
D	=	The execution of the planned orders is delayed until the last moment. For more information, refer to *Replenishment based on minimum inventory (p. 6-5)* .
E	=	*Manual replenishment (p. 6-6)*

F	=	No planning at all
-	=	Combination not permitted

Replenishment method different from planning method

If you use different methods for the planning and the replenishment, the planned orders are divided in two groups:

- **Order Release = To be released**
  ERP LN permits you to immediately transfer these planned orders to the execution level.
- **Order Release = Not to be released**
  Planned orders not immediately required for replenishment. ERP LN prevents you from transferring these planned orders to the execution level. If the situation changes, a later planning run can replace these planned orders by planned orders set to **To be released**.

In urgent cases, you can manually change the **Order Release** field from **Not to be released** to **To be released**.

To view the value of the **Order Release** field for a planned item, use the the Planned Orders (cprrp1100m000) session.

Planning on total forecast, replenishment on confirmed forecast

This topic describes how a VMI supplier can plan the supply for a customer based on the total forecast received from the customer, and replenish the customer based on confirmed forecast.

To build up sufficient inventory for an uninterrupted service and at the same time supply no more than necessary, the supplier can base its planning process on the total forecast and base the replenishment on confirmed forecast

If the supplier uses this strategy, the planned orders that fill the unconfirmed part of the forecast are not immediately transferred and executed.

For a detailed description of the difference between total forecast and confirmed forecast, refer to *Confirmed forecast and unconfirmed forecast (p. 3-3)* .

Parameter setting

To specify this planning method, define an appropriate terms and conditions agreement on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Responsible for Supply Planning	= **Yes**
Forecast received from Customer	= **Yes**
Confirm Supply	= **No**
Replenishment Based On	= **Confirmed Forecast**
Planning Based On	= **Total Forecast**

The planned orders that fill the unconfirmed part of the forecast are not immediately transferred and executed. For more information, refer to *Replenishment method different from planning method (p. 6-4)* .

Replenishment based on minimum inventory

To make sure the inventory level at the customer is sufficient at any time, a VMI supplier can replenish the customer based on the minimum inventory level at the customer's site. You can use this replenishment method in combination with various planning methods.

Parameter setting

To specify this replenishment method, define an appropriate terms and conditions agreement on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Responsible for Supply Planning	=	**Yes**
Forecast received from Customer	=	**Yes** or **No**
Use Min-Max Inventory Levels	=	**Minimum Levels** or **Minimum and Maximum Levels**
Replenishment Based On	=	**Inventory Level**
Planning Based On	=	**Total Forecast**, **Confirmed Forecast**, **Confirmed Supply**, or **Inventory Level**

For further details, refer to *To specify the minimum and maximum inventory (p. 7-5)* .

If the **Planning Based On** field and the **Replenishment Based On** field both have the value **Inventory Level**, the replenishment closely follows the planning. All planned orders are transferred to the execution level and executed without further delay. For more information, refer to *VMI planning based on minimum inventory levels (p. 5-5)* .

If the **Planning Based On** field and the **Replenishment Based On** field have different values, some of the planned orders are not transferred to the execution level. For more information, refer to *Replenishment method different from planning method (p. 6-4)* .

Manual replenishment

If you handle the replenishment manually, you enter the supply orders when the inventory at the customer site is physically replenished. ERP LN does not need to generate these orders. This topic describes how to set up ERP LN for this situation.

If the supplier's representative determines which items will be replenished when and in which quantity, you must select the manual replenishment method.

Parameter setting

To specify this replenishment method, define an appropriate terms and conditions agreement on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab.

Use the following settings:

Responsible for Supply Planning	= **Yes**
Replenishment Based On	= **Manual**
Planning Based On	= (Any value is permitted)

If the **Replenishment Based On** field is **Manual**, ERP LN can still generate planned orders, but these planned orders are not transferred to the execution level. These planned orders only serve to generate the dependent demand and create inventory of the item at the supplier's site. For more information, refer to *Replenishment method different from planning method (p. 6-4)* .

To turn off all planning functionality for an item during the effective period of a terms and conditions line, set the **Planning Based On** field and the **Replenishment Based On** field both to **Manual**.

Chapter 7
Maximum and minimum inventory

Supplier and customer can agree on maximum and minimum inventory levels at the customer's site. These limits influence the planning and replenishment methods. The minimum inventory level can also be used by the supplier as a planning or replenishment method.

To work with minimum and maximum inventory

This topic describes how a supplier in a vendor managed inventory (VMI) setup can perform supply planning and replenishment based on the minimum and maximum inventory level that the customer should have in inventory.

Relevant parameters

The following fields on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab, determine how this method is applied.

- **Use Min-Max Inventory Levels**
- **Min-Max Specification**
- **Time-phased Inventory Levels**
- **Inventory Unit**
- **Minimum Inventory Level**
- **Maximum Inventory Level**

Minimum levels, maximum levels, or both

To use this method to plan the supply to the customer, set the **Use Min-Max Inventory Levels** field to **Minimum Levels** or **Minimum and Maximum Levels**.

If you set the **Use Min-Max Inventory Levels** field to **Maximum Levels**, you must use another method to plan the supply.

If the terms and conditions agreement specify a maximum level, the customer limits the forecast for each forecast period to this maximum level. If the inventory

at the customer exceeds the maximum inventory level, ERP LN generates a <u>signal</u> for the customer and the <u>VMI supplier</u>.

Methods to specify inventory levels

You can define the required inventory levels in the following ways:

- Fixed inventory levels
- Time-phased inventory levels
- Inventory levels based on the number of days of supply

For more information, refer to *To specify the minimum and maximum inventory (p. 7-5)* .

Planning based on number of days supply

This topic describes how a supplier in a <u>vendor managed inventory (VMI)</u> setup can perform supply planning based on the number of days of supply that the customer should have in inventory.

Goal of the planning method

This planning method is a variant of the *To work with minimum and maximum inventory (p. 7-1)* planning method.

The goal of this planning method is to keep the customer's inventory at a sufficient level to safeguard the customer's continuing operation in case of temporary supply problems. The inventory level must be such, that, if all supply would suddenly stop, the customer would have sufficient inventory to continue operations for a particular number of days before the customer runs out of stock.

Relevant parameters

The following fields on the Terms and Conditions Line (tctrm1620m000) session's **Planning** tab determine how this method is applied.

- **Use Min-Max Inventory Levels**
- **Min-Max Specification**
- **Min-Max Number of Days**
- **Minimum Factor**
- **Maximum Factor**

To use the planning method described in this topic, set the **Min-Max Specification** field to **Number of Days**.

Note

If you set the **Min-Max Specification** field to **Number of Days**, you cannot select the **Confirm Supply** check box or the **Use Confirmed Supply** check box anymore and the **Replenishment Based On** field is automatically set to the fixed value of **Inventory Level**.

Minimum levels, maximum levels, or both

To use this method to plan the supply to the customer, set the **Use Min-Max Inventory Levels** field to **Minimum Levels** or **Minimum and Maximum Levels**.

If you set the **Use Min-Max Inventory Levels** field to **Maximum Levels**, you must use another method to plan the supply.

Minimum factor and maximum factor

In this planning method, you can determine the lower and upper bounds between which the inventory can fluctuate.

Example

Suppose, you have set the following parameters:
- **Min-Max Number of Days** = 10 days
- **Use Min-Max Inventory Levels** = **Minimum and Maximum Levels**
- **Minimum Factor** = 0.9
- **Maximum Factor** = 1.5

Then, this planning method aims to keep the customer's inventory sufficient for at least 9 days (0.9 * 10) and at most 15 days (1.5 * 10)

Calculation

If the terms and conditions change, ERP LN recalculates the minimum and maximum inventory. When the customer approves a forecast revision, the maximum and minimum levels are frozen for that revision.

For each forecast period, ERP LN performs the following steps:

1. ERP LN adds the value of the **Min-Max Number of Days** field to the start of the concerned forecast period. This addition produces the horizon date.

2. ERP LN calculates the sum of the forecast for every forecast period between the start of the designated forecast period and the horizon date.

   If the horizon date falls in the middle of a forecast period, ERP LN uses a proportional part of the forecast of that forecast period.

   Only the forecast periods' start dates are recorded. A forecast period's finish date is derived from the next forecast period's start date. Therefore, the

length of the ultimate forecast period is unspecified. For the purpose of this calculation, ERP LN assumes that the length of the ultimate forecast period equals the preceding forecast period.

3. The effective *minimum* inventory for the relevant forecast period is the calculated sum of the forecast values multiplied by the value of the **Minimum Factor**.

4. The effective *maximum* inventory for the relevant forecast period is the sum of the forecast values multiplied by the value of the **Maximum Factor**.

> **Note**
>
> The number of days is expressed in calendar days, not in working days. The calculation does not take a working calendar into account. Therefore, the procedure also calculates minimum and maximum inventory levels for not workable days.

Example

In this example, the following values apply.

Parameter	Value
Min-Max Number of Days	10 days
Use Min-Max Inventory Levels	**Minimum and Maximum Levels**
Minimum Factor	0.9
Maximum Factor	1.5

The following table shows the forecast in each forecast period.

Forecast period	Period start date	Forecast demand
22	April 2	150
23	April 9	49
24	April 16	84
25	April 23	35

The following table shows how the calculation of the minimum and maximum inventory proceeds.

Period	10-day period		Sum of forecast	Inventory levels	
	First day	Last day		Minimum Inventory	Maximum Inventory
22	April 2	April 11	150 + (3/7) * 49 = 171	153.9 (=171 * 0.9)	256.5 (=171 * 1.5)
23	April 9	April 18	49 + (3/7) * 84 = 85	76.5	127.5
24	April 16	April 25	84 + (3/7) * 35 = 99	89.1	148.5

To specify the minimum and maximum inventory

This topic describes how a supplier in a vendor managed inventory (VMI) setup can perform supply planning based on the minimum and maximum inventory level that the customer should have in inventory.

Safety stock and maximum inventory level of an item

If a valid terms and conditions agreement prescribes a *minimum* inventory, ERP LN ignores the item's safety stock set up for the customer's warehouse.

If a valid terms and conditions agreement prescribes a *maximum* inventory, ERP LN ignores the item's <u>maximum inventory level</u> set up for the customer's warehouse.

If the terms and definitions do *not* prescribe a minimum inventory on a particular date, ERP LN applies the item's safety stock. Similarly, if the terms and definitions do not prescribe a *maximum* inventory on a particular date, ERP LN applies the item's maximum inventory level.

You can define an item's safety stock and maximum inventory level in the Items - Ordering (tcibd2500m000) session or the Warehouse - Item (whwmd2510m000) session.

Methods to specify inventory levels

You can define the required inventory levels in the following ways:

- Fixed inventory levels
- Time-phased inventory levels
- Inventory levels based on the number of days of supply

You can find the fields mentioned in the following sections in the Terms and Conditions Line (tctrm1620m000) session, on the **Planning** tab.

To define fixed inventory levels

To define fixed levels for the minimum inventory or the maximum inventory, complete the following steps:

1. Set the **Min-Max Specification** field to **By Quantity**.

2. Enter the required inventory levels in the **Minimum Inventory Level** field and the **Maximum Inventory Level** field.

To define time-phased inventory levels

To define time-phased levels for the minimum inventory or the maximum inventory, complete the following steps:

1. Set the **Min-Max Specification** field to **By Quantity**.

2. Enter the required inventory levels in the Planning Inventory Levels (tctrm1136m000) session.

To start the Planning Inventory Levels (tctrm1136m000) session, in the Terms and Conditions Line (tctrm1620m000) session, open the **Planning** tab, and then, on the **Specific** menu, click **Inventory Levels**.

To define number of days supply

For instructions how to specify the minimum and maximum inventory levels by defining the number of days supply, refer to *Planning based on number of days supply (p. 7-2)* .

Note

If the terms and conditions change, ERP LN recalculates the minimum and maximum inventory. When the customer approves a forecast <u>revision</u>, the maximum and minimum levels are frozen for that revision.

Appendix A
Glossary

A

available-to-promise

The item quantity that is still available to be promised to a customer.

In ERP 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, ERP 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 ERP LN, the term CTP is used.

Acronym: ATP

business partner

A party with whom you carry out business transactions, for example, a customer or a supplier. You can also define departments within your organization that act as customers or suppliers to your own department as business partners.

The business partner definition includes:

- The organization's name and main address.
- The language and currency used.
- Taxation and legal identification data.

You address the business partner in the person of the business partner's contact. The business-partner status determines if you can carry out transactions. The transactions type (sales orders, invoices, payments, shipments) is defined by the business partner's role.

buy-from business partner

The business partner from whom you order goods or services; this usually represents a supplier's sales department. The definition includes the default price and discount agreements, purchase-order defaults, terms of delivery, and the related ship-from and invoice-from business partner.

Synonym: buy-from supplier

buy-from supplier

See: *buy-from business partner (p. A-2)*

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.

cluster

A group of entities that are not necessarily related to one financial company or logistic company.

In Enterprise Planning, clusters are used for groups of warehouses, connected by supplying relationships.

clustered item

A plan item in Enterprise Planning that is linked to a particular warehouse cluster. The inventory data for a clustered item represents only the quantities related to that specific cluster.

In the item code of a clustered item, the cluster segment contains the code of the cluster.

You can use clustered items to model distribution planning within a site or between sites.

The planning methods in Enterprise Planning use the total inventory of a clustered item in all warehouses in the cluster. Note that a cluster can also contain just one warehouse.

component CTP check

An availability check on the components necessary to produce an extra quantity of an item to deliver a customer order on time.

The type of check that is performed on a component item itself depends on the CTP parameters for the component in question.

The component CTP check is performed on components in the bill of critical materials or the bill of material, depending on the order horizon. Only components defined as CTP critical are checked.

confirmed forecast

The part of the total forecast for which the customer definitely expects a supply.

If the customer sends the forecast by period to the supplier that plans the supply, the customer can differentiate between confirmed and unconfirmed forecast.

Typically, confirmed forecast of a component is derived from actual sales orders and sales schedules of end item. The user can use various methods to determine how much of the forecast is confirmed forecast.

See also unconfirmed forecast.

confirmed supply

Quantity of the item the supplier has confirmed will be delivered to the customer on the planned delivery date.

Note
The confirmed supply can be less than the quantity requested by the customer.

demand forecast

The item quantity that is forecast to be sold in a plan period, on the basis of seasonal patterns and/or historical demand data.

The demand forecast is part of the demand plan for a plan item or channel.

dependent demand

A demand related to a demand for another item.

Two basic types of dependent demand exist:
- Demand for components that are used to manufacture an item.
- Demand that originates from another warehouse location or a related site.

The dependent demand is equal to the sum of the following fields:
- Dependent material demand
- Dependent Scheduled Demand
- Dependent Distribution Demand

ERP LN explodes the ATP and the dependent demand of a main item to plan items that have the same cluster as the warehouse you specified on the bill of critical materials of the main item.

direct delivery

The process in which a seller orders goods from a buy-from business partner, who must also deliver the goods directly to the sold-to business partner. By means of a purchase order that is linked to a sales order or a service order, the buy-from business partner delivers the goods directly to the sold-to business partner. The goods are not delivered from your own warehouse, so Warehouse Management is not involved.

A seller can decide for a direct delivery because:
- There is a shortage of available stock.
- The ordered quantity cannot be delivered in time.
- The ordered quantity cannot be transported by your company.
- Costs and time are saved.

effective date

The first day on which a record or a setting is valid. The effective date often includes the effective time.

effectivity period

The period of time defined by the effective date and expiry date in which an agreement is valid.

effectivity unit

A reference number on a sales order line or a sales quotation line that is used to model deviations for a unit effective item, or to peg purchase orders or production orders to a specific sales order line.

execution level

Within Enterprise Planning, the designation of the ERP LN packages that control the execution of orders and the actual goods flow, such as:

- Manufacturing
- Order Management
- Warehouse Management

Enterprise Planning uses planning algorithms to carry out simulations and optimizations. The other packages control the execution of orders, and the goods flow.

expiry date

The last date on which a record or a setting is valid. The expiry date often includes the expiry time.

forecast

The demand for an item, calculated by the customer that purchases that item, and aggregated to forecast periods according to the agreed terms and conditions.

The customer sends the forecast to the supplier that plans the item supply.

forecast period

The periods to which the customer aggregates forecast caused by multiple orders.

The forecast periods are based on the terms and conditions.

frozen zone-

The number of days, calculated from the current date, for which you can no longer reduce the quantity of required items.

frozen zone+

The number of days, calculated from the current date, for which you can no longer increase the quantity of required items.

independent demand

A demand that is unrelated to demand for other items.

Examples of independent demand:
- Demand for finished goods.
- Demand for components required for destructive testing.
- Service part requirements.

inventory level

The inventory quantity that can be available in a warehouse. In VMI or subcontracting scenarios, warehouse supply can be based on inventory levels laid down in contracts between suppliers and customers.

inventory transaction type

A classification that is used to indicate the type of inventory movement.

The following inventory transaction types are available:
- **Issue**
  From warehouse to other entity than warehouse.
- **Receipt**
  From other entity than warehouse to warehouse.
- **Transfer**
  From one warehouse to another.
- **WIP Transfer**
  From one costing work center to another.

item

In ERP LN, the raw materials, subassemblies, finished products, and tools that can be purchased, stored, manufactured, sold, and so on.

An item can also represent a set of items handled as one (kit), or exist in multiple product variants (generic item).

You can also define nonphysical items, which are not held in inventory but can be used to post costs or to invoice services to customers. Examples of nonphysical items:
- Cost items (for example, electricity)
- Service items
- Subcontracting items
- List items (menus/options)

item code

Identification code for an item (product, component, or part). The item code can consist of multiple fields or segments.

item customer plan

A time-phased overview of the demand and supply for an item related to a specific customer.

ERP LN provides item customer plans to work with vendor managed inventory. The item customer plan displays data such as the forecast your customer sent to you and the confirmed supply information you sent to your customer.

You can compare an item customer plan with an item order plan. The difference is, that the item order plan displays demand and supply from *all* suppliers or customers and the item customer plan displays demand and supply for a *specific* customer.

item group

Group of items with similar characteristics. Each item belongs to a particular item group. The item group is used in combination with the item type to set up item defaults.

item supplier plan

A time-phased overview of the demand and supply for an item related to a specific supplier.

ERP LN provides item supplier plans to work with vendor managed inventory. The item supplier plan displays data such as the forecast you sent to the supplier and the confirmed supply information the supplier sent back to you.

You can compare an item supplier plan with an item order plan. The difference is, that the item order plan displays demand and supply from *all* suppliers and customers and the item supplier plan displays demand and supply for a *specific* supplier.

maximum inventory level

The maximum inventory quantity that can be available in a warehouse.

minimum inventory level

The minimum inventory quantity that must be available in a warehouse.

multicompany distribution order

A distribution order in which two separate logistical companies are involved.

In ERP LN, the user can determine if the multicompany planned distribution must be transferred to either a purchase order, or a warehouse transfer. To do so, the user must define the order type for a specific company relation.

nonclustered item

A plan item in Enterprise Planning that is planned without referring to a particular warehouse cluster.

In the item code of a nonclustered item, the cluster segment is empty.

If clustered items exist that have the same item-base segment as the nonclustered item, these items are physically identical, but the inventory data differs (for example, the quantity on hand). The inventory data for a nonclustered item does not include the quantities related to specific clusters. You can use clustered items to model distribution planning within a site or between sites.

If ERP LN is installed without cluster segments, all plan items are nonclustered items.

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. ERP 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.

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.

plan item

An item with the order system **Planned**.

The production, distribution, or purchase of these items is planned in Enterprise Planning based on the forecast or the actual demand.

You can plan these items by means of:

- Master-based planning (similar to master production scheduling techniques).
- Order-based planning (similar to material-requirements planning techniques).
- A combination of master-based planning and order-based planning.

Plan items can be one of the following:

- An actual manufactured or purchased item.
- A product family.
- A basic model, that is, a defined product variant of a generic item.

A group of similar plan items (or families) is called a product family. The items are aggregated to give a more general plan than the one devised for individual items. A code displayed by the item code's cluster segment shows that the plan item is a clustered item that is used for distribution planning.

planned distribution order

An order in Enterprise Planning for an internal supplier or sister company to deliver a quantity of an item.

planned order

A supply order in Enterprise Planning that is created for planning purposes, but which is not an actual order yet.

Enterprise Planning works with planned orders of the following types:

- Planned production order
- Planned purchase order
- Planned distribution order

Planned orders are generated in the context of a particular scenario. The planned orders of the actual scenario can be transferred to the execution level, where they become actual supply orders.

planned production order

A planned order in Enterprise Planning to produce a certain quantity of an item.

planned purchase order

A planned order in Enterprise Planning to purchase a certain quantity of an item from a supplier (buy-from business partner).

planned receipt date

The date on which the goods are expected to arrive in the destination warehouse.

planner

The employee or department responsible for planning the production, purchase and distribution of items. The planner takes into account the inventory levels, availability of materials, and capacities of resources, and reacts on signals such as rescheduling messages that ERP LN generates.

planning horizon

The time period for which ERP LN maintains planning data for an item.

The planning horizon is expressed as a number of working days from the date you carry out the simulation.

Enterprise Planning does not generate supply plans or planned orders beyond an item's planning horizon.

To calculate the planning horizon, Enterprise Planning uses the calendar that you specified for the enterprise unit of the default warehouse to which the plan item belongs.

Note

Enterprise Planning moves the planning horizon to the end of the plan period in which it falls.

production order

An order to produce a specified quantity of an item on a specified delivery date.

product type

User-definable item grouping data that is used as a sorting and selecting criterion. The product type is intended for classifying items with similar characteristics for production purposes.

purchase contract

Purchase contracts are used to register specific agreements with a buy-from business partner that concern the delivery of specific goods.

A contract is comprised of:

- A purchase contract header with general business partner data, and optionally, a linked terms and conditions agreement.
- One or more purchase contract lines with price/discount agreements and quantity information that apply to an item or price group.

purchase order

The order that indicates which items are delivered by a buy-from business partner according to certain terms and conditions.

A purchase order contains:

- A header with general order data, buy-from business partner data, terms of payment, and terms of delivery.
- One or more order lines with more detailed information about the actual items to be delivered.

replenishment plan

A schedule of dates, times, and quantities for the delivery of items.

The supplier creates the replenishment plan and sends the replenishment plan to the customer.

revision

The revision number linked to the messages that communicate demand and supply data between customer and supplier.

A business partner can send multiple revised versions of messages with demand and supply data. Each revised version gets a revision number that has been incremented by one.

The customer generates the revision numbers. The supplier uses the same revision to mark a corresponding message to the customer.

safety stock

The buffer inventory necessary to meet fluctuations in demand and delivery lead time. In general, safety stock is a quantity of inventory planned to be in inventory to protect against fluctuations in demand or supply. In the context of master production scheduling, safety stock is the additional inventory and capacity planned as protection against forecast errors and short-term changes in the backlog.

sales contract

Sales contracts are used to register specific agreements with a sold-to business partner about the delivery of certain goods.

A contract is comprised of:

- 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 order

An agreement that is used to sell items or services to a business partner according to certain terms and conditions. A sales order consists of a header and one or more order lines.

The general order data such as business partner data, terms of payment, and terms of delivery are stored in the header. The data about the actual items to be supplied, such as price agreements and delivery dates, is entered on the order lines.

segmentation

A subdivision of the item code in different logical parts, called segments.

These segments are visible in the sessions as separate fields. Examples of segments are:

- Project segment
- Cluster segment
- Item identification

ship-to business partner

The business partner to which you ship the ordered goods. This usually represents a customer's distribution center or warehouse. The definition includes the default warehouse from which you send the goods, the carrier who carries out the transport, and the related sold-to business partner.

Synonym: ship-to customer

ship-to customer

See: *ship-to business partner (p. A-12)*

signal

> A short standardized message that ERP LN generates to advise the user to change or correct a specific planning parameter, value, or constraint to avoid undesired results or conflicts in planning.

sold-to business partner

> Usually a customer's purchase department; the business partner who orders goods or services from your organization, that owns the configurations you maintain, or for whom you perform a project.
>
> Details of the agreement with the sold-to business partner can include:
> - Default price and discount agreements.
> - Sales order defaults.
> - Terms of delivery.
> - The related ship-to and invoice-to business partner.

supplying relationship

> A distribution link between a supplying warehouse cluster and a receiving cluster. The clusters involved can be in the same site, or in different sites.
>
> Enterprise Planning uses supplying relationships for distribution planning: the supplying relationships represent valid supply paths for particular items or groups of items. You can specify supplying relationships at the level of individual items, but also at more general levels.
>
> The supplying relationships also determine the costs of supply, lot size rules, and other parameters.

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, planning, logistics, invoicing, and allocation/hard 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, planning, logistics, invoicing, and allocation/hard pegging for the lines.

terms and conditions group

Groups the detailed terms and conditions about orders, planning, logistics, invoicing, or allocation/hard pegging for the terms and conditions line.

terms and conditions line

Holds the values for the search attributes of a terms and conditions search level. Therefore, it specifies the fields to which the detailed terms and conditions, as stored in the terms and conditions groups, apply.

terms and conditions search attribute

An element (field) selected on the terms and conditions search level and specified and searched for on the terms and conditions line.

unconfirmed forecast

The part of the total forecast for which the customer desires a supply in addition to the confirmed forecast. Possibly, the customer is unsure whether this quantity will be needed.

The sum of the confirmed forecast and the unconfirmed forecast is the total forecast.

Typically, the total forecast includes not only the demand based on actual sales orders for the customer's end products, but also forecast demand based on estimated future sales of the customer's end products.

See also <u>confirmed forecast</u>.

unit effectivity

A means to control the validity of variations by effectivity units. Unit effectivity enables you:

- To model changes for the following entities:
  - Engineering bill of material
  - Production bill of material
  - Routing
  - Routing operations
  - Supplier selection
  - Sourcing strategies
- To peg purchase orders and production orders to the sales order line to which they belong.

vendor managed inventory (VMI)

Vendor managed inventory is 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 supplier

The supplier (buy-from business partner) that handles the inventory management and optionally the supply planning of a particular item for a customer. This term is used in a vendor managed inventory (VMI) setup.

A terms and conditions agreement can designate a particular supplier as the VMI supplier for an item.

VMI warehouse

A warehouse in which goods are held in consignment. The supplier owns the inventory. From the supplier's perspective, this is a warehouse usually located at the customer's; but usually the supplier is responsible for warehouse management or supply planning, or both. From the customer's perspective, this is a warehouse usually on his premises that is usually managed by the supplier or for which the supplier performs supply planning, or both.

warehouse

A place for storing goods. For each warehouse, you can enter address data and data relating to its type.

warehouse order

See: *warehousing order (p. A-16)*

warehouse transfer

A warehousing order to move an item between warehouses.

A warehouse transfer consists of a warehousing order of inventory transaction type **Transfer**.

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

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