



Infor LN Performance Guidelines

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About this document

This document provides LN administrators with guidelines and instructions on how to preserve system performance and prevent database growth. In this document, performance aspects are dealt with from a functional application point of view.

Objective

This document provides administrators and business consultants with guidelines and instructions on how to improve system performance and minimize database size and growth of an Infor LN environment by optimizing various application settings. In this document, therefore, performance aspects are dealt with from a functional application point of view. For technical performance aspects and recommendations, refer to the *Infor LN- Performance, Tracing and Tuning Guide (U9357)*.

Document summary

The following chapters are included:

- Chapter 1: General Performance Guidelines
- Chapter 2: Common
- Chapter 3: Order Management
- Chapter 4: Project
- Chapter 5: Enterprise Planning
- Chapter 6: Manufacturing
- Chapter 7: Warehousing
- Chapter 8: Freight
- Chapter 9: Service
- Chapter 10: Financials
- Chapter 11: Invoicing
- Chapter 12: People
- Chapter 13: Taxation
- Chapter 14: Multicompany
- Chapter 15: Tools
- Chapter 16: Implementation Process Aspects

How to read this document

This document is assembled from online Help topics. Therefore, references to other sections are presented as shown in the following example:

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

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

Related documents

- *Infor LN- Performance, Tracing and Tuning Guide (U9357)*
- *Infor LN- Sizing Guide (B0045)*
- *Infor LN- Administrator's Guide (U8854)*

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Introduction on performance and database growth

During LN implementation, you can follow several general guidelines to influence system performance and database growth. These guidelines are functional, technical, and process related, and are not a matter of right or wrong. The guidelines relate to LN functionality you can decide to use. However, you must be aware of the effects of specific functionality and settings on performance and database growth, during and after LN implementation.

A relationship exists between performance and database growth; generally more data results in less performance. The creation of more records, which takes time by itself, causes large tables. Selecting records from a large table takes more time than selecting data from a small table.

To achieve acceptable system performance and database growth, the following general guidelines are important:

- *Disable unused concepts (p. 16)*
- *Clean up data (p. 16)*
- *Level of detail (p. 17)*
- *Performance-related settings and tools (p. 18)*
- *Jobs (p. 18)*
- *Additional steps (p. 18)*
- *Selection ranges (p. 18)*
- *Performance check programs (p. 18)*

Note

To optimize performance for BOD processing, refer to the *Performance* section in the *Infor LN Configuration Guide for Infor ION*.

Disable unused concepts

If concepts such as Commissions, Rebates, or Contracts are enabled in the parameters, LN checks this functionality during transactions, even if you did not specify anything for these concepts. Therefore, if you do not use a concept, to improve performance, disable the corresponding parameter.

Clean up data

Retrieving records from a large table requires more time than retrieving data from a small table. Therefore, from a performance point of view and a data growth perspective, tables must be kept as small as possible. To achieve this, you can do the following:

- Delete records.
- Archiving: Move records to another company.
- History logging: Copy records to another table.

Note

For more information, refer to the *User's Guide for ERP LN Archiving* (U9352* US).

Delete records

To improve performance and reduce database growth, deleting records is highly effective. The disadvantage of deleting records is that data is no longer available. Usually, however, not all records need to be saved.

For example, line activities are stored by warehouse. Normally, you do not need to keep these records. Therefore, after closing a warehouse order, line activities can be removed. The *User's Guide for ERP LN Archiving* describes several sessions you can use to delete old data. Other data such as items and business partners can be reviewed once in a while, after which you can delete the data you no longer need.

For every order and contract table a session is available to archive and delete old orders. In these sessions, you can specify several characteristics to select the orders to be removed, such as date or status. Run these sessions on a regular basis.

Archiving

If data must be available for future usage, such as analysis or review, but you no longer need the data in a live company, you can archive the data. This means the data is deleted from the live company, and moved to another company, the so-called archive company. From a performance point of view, archiving has the same effect as deleting records, because the data is no longer present in the live company. However, the data remains available in the archive company, which means the total data amount does

not change. Note that at several places in LN, sessions are available for archiving. From a database growth perspective, archiving and deleting are the preferred options.

History

To keep track of the changes with respect to specific orders, and not burden the actual order tables, you can write data to history tables. When an order is created, it is copied to the history, and every update of the actual order results in a new record in the history table.

There are processes that require data to be present in the live company, such as sales and purchase statistics and reconciliation in Sales and Procurement. To unburden the transactional order tables, these processes make use of the history tables, so data can be removed from the transactional order tables at an early stage. In other places, such as in Warehousing, to keep track of a specific warehouse order you can use history logging.

Note that if you use history logging, you must archive and delete data from the history tables on a regular basis. For most data, this can be done immediately after logging. For data such as the purchase and sales orders history, the moment of deleting or archiving depends on other business processes such as reconciliation.

Conclusion

You must delete data from the live environment on a regular basis. If data is still required for future analysis, archive the data. You must only use history logging when required. Archive data as soon as possible, and delete the data from the live environment.

Level of detail

For several concepts, you can vary the level of detail. For example, you can define the number of BOM levels, the number of cost components, the number of reconciliation groups, or the number of clusters and plan items. Sometimes a multilevel BOM is required and is very beneficial. However, more BOM levels require more transactions, which makes performance worse. Therefore, be careful adding when extra levels of detail, and, if possible, look for alternatives. For example, for some warehouses and plan items you do not need MRP to plan them. You can consider other planning mechanisms such as TPOP, SIC, or order controlled/single.

In LN, you can apply very detailed modelling. For example, in Tax Exception Modeling, if you must deviate from standard tax logic, you can specify which tax code is applicable in which situation. However, detailed modelling requires the specification of a large number of rules, which slows down performance. If you must deal with exceptional cases, it is best to do manual corrections.

Performance-related settings and tools

In addition to functional application changes, numerous settings and tools to improve performance are available. Some techniques are:

- *First free numbers caching* (p. 21)
- *Parallel processing* (p. 55)
- *Table boosters* (p. 26)

For more information, refer to the *LN- Performance, Tracing and Tuning Guide (U9357)*, which is available through solution **22881401** at [Infor Xtreme](#).

Jobs

Several activities, such as printing of documents, MRP, and posting of financial integration transactions can be carried in a job during the quiet hours such as during the night or weekend. The number of jobs running simultaneously is limited by the actual number of CPUs.

Additional steps

Steps can be automated by using flexible order processing, which limits user interaction and increases usability. However, only automate additional steps if they are required. Automated steps still influence performance and sometimes result in additional database growth. Steps such as Generate Freight Orders and Generate Inventory Commitments should only be added if required during the sales process.

The same goes for the document printing, which must only be enabled when required.

Selection ranges

At several places in LN you can specify ranges, such as in print sessions or update sessions. To increase performance, narrow the selection.

Performance check programs

A few programs can check performance related settings of LN applications. If those settings are changed, run these programs. This is especially important during implementation.

Examples of these programs are as follows:

- OnePoint Diagnostics (refer to *OnePoint Diagnostics* (p. 131)).
- Tax Parameter check (refer to *Evaluate tax parameters for performance* (p. 123)).

First free numbers

In several LN processes, numbers must be assigned to entities such as shipments, orders, and invoices. However, in terms of system performance, the assignment of numbers can be the bottleneck.

To improve the performance of sessions in which new order numbers are assigned, define a cache size for a series in the First Free Numbers (tcmcs0150m000) session. The cache size is the number of new series numbers LN generates simultaneously. If there are series numbers in cache, users do not have to wait while LN generates and checks the next series numbers.

- **Cache size = 0**

No caching is applied. If you request a new number, the number is only committed after the transaction to which the number applies is completed.

Disadvantage: The number series is locked during the transaction. Other users cannot request a new number from the same series until the transaction is completed.

Advantage: No numbering gaps.

If number gaps are not allowed, use a cache size of 0. Preferably, request a new number close to the end of a transaction to reduce locking time. In high volume implementations, a cache size of 0 can cause performance and locking problems.

- **Cache size = 1**

If you request a new number, the number is committed immediately, even if the transaction to which the number applies is not yet completed.

Disadvantage: Numbering gaps can occur if a transaction is not completed.

Advantage: The number series is only locked for a short time, which improves performance.

A cache size of 1 is the default value for number series. In this way, performance and locking problems in high volume implementations are avoided as much as possible.

- **Cache size > 1**

The value of the cache size indicates how many new numbers are requested simultaneously. The numbers are committed immediately, even if transactions are not yet completed.

Disadvantage: Large numbering gaps can occur if more than one transaction is unfinished.

Advantage: The number series is only locked for a short time. Furthermore, for all numbers requested, the number series must only be updated once, which improves performance.

A cache size larger than 1 is only recommended if a cache size of 1 does not solve locking problems sufficiently.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Note

For more information, refer to the *LN- Performance, Tracing and Tuning Guide (U9357)*.

Serials and lots in Warehousing

Keeping track of serialized items increases the number of transactions, especially if you select the **Serials in Inventory** check box in the Items - Warehousing (whwmd4500m000) details session.

Only select the **Serials in Inventory** check box in low volume scenarios such as to allocate a specific serialized item to an order. Selecting the check box in a high volume scenario results in considerable database growth for Warehousing and financial integrations. For example, a shipment of 10 similar anonymous items is handled as one transaction of 10 pieces. In case of serialized items, every serialized item results in a separate transaction.

If the **Serials in Inventory** check box is cleared, you can still assign, for example, a specific serialized item to an outbound order during the outbound procedure to know which serialized item is shipped to a specific customer. In this way, no extra database growth occurs.

The **Lots in Inventory** check box in the Items - Warehousing (whwmd4500m000) details session also affects database growth and system performance. However, the multiple items in a lot are not processed individually as is the case with serialized items, so the impact of lots will be less than serialized items.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Implemented software components

To indicate whether a specific package, module or concept is implemented, use the Implemented Software Components (tccom0500m000) session. However, if you are not actually using a specific package, module, or concept, clear the corresponding parameter.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Project pegging

Project pegging functionality can be implemented by selecting the appropriate parameters in these sessions:

- Implemented Software Components (tccom0100s000)
- Project Pegging Parameters (tcpeg0100m000)
- Items (tcibd0501m000)

Example

If, in the Implemented Software Components (tccom0100s000) session, the **Project Pegging** check box is selected, the number of transactions registered in Cost Transactions (tpppc2100m000) session increases. This results in additional database growth.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

COM and IBD parameters

The following parameters are important regarding system performance:

- **Usage Distance Tables in the COM Parameters (tccom5000m000) session**
If you do not base delivery dates on distances tables, to increase performance, in the **Usage Distance Tables** field select **No**.
- **Check Project Code in Item Code in the Item Base Data Parameters (tcibd9199m000) session**
An item code in LN can consist of a project segment and an item segment. If no PCS or TP project is present for an item, which means the item is neither customized (PCS) nor allocated (TP), the project segment of the item code is empty. LN then considers the item code as consisting of nine spaces, followed by the name in the item segment.
However, external applications usually do not recognize an item code consisting of a project segment and an item segment, or an item code preceded by nine spaces. Therefore, the

project segment of an item code transferred from LN to an external application is not recognized as such by the external application, and becomes part of the item name.

To avoid defining item codes in LN that are conflicting in external applications, select the **Check Project Code in Item Code** check box.

If this check box is selected, and you add a new item code or project code, LN performs checks:

- If you define an item in the Items (tcibd0501m000) details session, the first nine characters of the item name should not equal an existing project code in LN.
- If you define a project code in the General Projects (tcmcs0552m000) details session, the code should not equal the first characters of an existing item code in LN.

Selecting this check box makes software performance significantly worse. Instead, you can clear this check box and use the Print Items where a Project Code is part of the Item Code (tcibd0401m100) session to check whether a range of existing item codes or project codes will produce conflicts for external applications.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Cost component setup

To break down an item's standard cost, sales price, or valuation price, use cost components. With cost components, you can compare estimated and actual costs, calculate production variances, and analyze costs in Standard Cost Calculation.

If cost components are set up in a detailed way, detailed records exist in the Item - Calculated Valuation Prices (ticpr2540m000) session and the Item - Standard Valuation Prices (ticpr3540m000) session. Additional financial integration transactions are created because integration transactions are logged by cost component. A detailed cost component setup also causes additional cost details in domains such as Sales and Warehousing. This increases database growth and makes performance worse, especially during production completion and the item receipt process.

Reduce the number of cost components in the effective cost component structure, which is displayed in the Effective Cost Component Structure (ticpr0112m000) session, as much as possible. The minimum number is three aggregated cost components: one for material, one for operation, and one for surcharges. From a performance point of view, the following is advised:

- **Reduce the number of cost components**
 - One operation cost component for all operation rates.
 - One cost component for all subcontracting rates.
 - One cost component for item and warehouse surcharges.
 - One cost component for actual labor rates (in People).

Ensure you only use cost components that are required.

- **Use aggregated cost components**

The standard cost is calculated by (detailed) cost component for a multilevel BOM. A similar calculation of valuation prices (actual prices) would result in a price structure with many cost components, especially for manufactured items. In case of a warehouse transfer, issue to WIP, and so on, postings are made for every cost component. However, this detailed cost information does not add functional value in Warehousing. If you aggregate cost components, the number of cost components in financial transactions is reduced. Therefore, aggregate operation cost, material cost, and surcharges to the three cost components that are defined in the Items - Costing (ticpr0107m000) session.

If you do not enter a **Standard Cost Component Scheme** in the Items - Costing (ticpr0107m000) session, production order costs, production order variances, and surcharges are posted by aggregated cost component. This improves performance and decreases database growth.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Log zero amounts

If project pegging is implemented, cost mapping functionality allows you to link the cost components and the cost objects using the Cost Mappings (tcmcs0149m000) session.

Example

If, in the Cost Mappings (tcmcs0149m000) session, the **Log Zero Amounts** check box is selected, the number of transactions registered in Cost Transactions (tpppc2100m000) session increases. This results in additional database growth.

Performance aspects

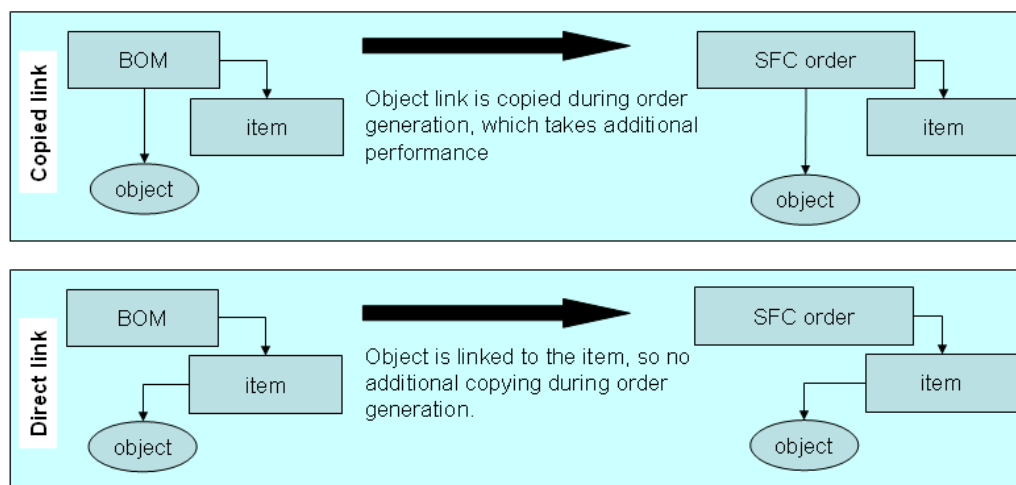
- Effect on CPU: Yes
- Effect on database growth: Yes

Object Data Management

To link files to objects such as items, sales orders, or BOMs, use Object Data Management (ODM) files. At several places in LN, the linked files are automatically available for related objects, such as a production order. There are two ways to do this:

- **Direct link**
If a file is linked to an object, such as an item, and a 'hard table reference' exists between another object, such as a production order and the item, the file linked to the item is also available on the production order by the item reference. This does not cost any performance.
- **Copied link**
If a file is linked to an object, such as a BOM, and no 'hard table reference' exists between another object, such as a production order and the BOM, often the link is copied to the next object, that is, from the BOM to the production order. This makes performance worse.

From a performance point of view, it is best to use a direct link. So, in case of the example, it is better to link a file to the item than to the BOM.



Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Table boosters

To increase the speed of sessions and processes that are slow because of large amounts of data that must be handled, you can use *table boosters*, which speed up access to specific database tables by

loading the table, or a specified part of it, into memory. Table boosters are defined in the Table Boosters (tcmcs0598m000) session. See also *Table boosters* (p. 57)

Tables

Table boosters are implemented for tables. By default, table boosters are not active. If you access a table, LN builds a list of tables for which you can activate the boosters in the Table Boosters (tcmcs0598m000) session.

Note

You can only activate table boosters for tables that are accessed at least once.

For more information, refer to the *LN- Performance, Tracing and Tuning Guide (U9357)*.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Financial transactions

Financial economic transactions

During order entry, requisition submittal, or activation of a contract line, you can indicate whether you want to log expected financial transactions (FITR). For example, during purchase order entry, expected financial commitments can be created that will become actual commitments when the order is received in Warehousing.

This functionality is supported by the following parameters:

- **Log Financial Economic Transactions** in the Procurement Parameters (tdpur0100m000) session.
- **Log Financial Economic Transactions** in the Purchase Requisition Parameters (tdpur0100m200) session.
- **Log Financial Economic Transactions** in the Purchase Contract Parameters (tdpur0100m300) session.
- **Log Financial Economic Transactions** in the Sales Parameters (tdsls0100s000) session.
- **Log Financial Economic Transactions** in the Sales Contract Parameters (tdsls0100s300) session.

However, financial economic transactions result in additional postings, which decrease performance during order entry and increase data growth. Therefore, only log financial economic transactions if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Transaction time fence

If a purchase schedule is generated for an external business partner, logistic agreements are defaulted from the Purchase Contract Line Logistic Data (tdpur3102m000) session. In this session, the **Transaction**

Time Fence field determines for which purchase schedule lines financial transactions must be logged. This **Transaction Time Fence** is defaulted from the Items - Purchase Business Partner (tdipu0110m000) session.

The financial postings for sales schedules depend on the **Transaction Time Fence** in the Items - Sales Business Partner (tdisa0510m000) session.

If the fab period is short, you can minimize the number of financial transactions to save system performance and avoid unnecessary data growth. To do this, set the **Transaction Time Fence** field to **Lines in the Firm Period** or **Lines in the FAB Period**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Pricing

Number of matrix sequences

If you enter matrix sequences in the Matrix Priorities (tdpcg0120m000) session, limit the number of sequences. For example, if a matrix sequence is not linked to a Pricing Control (PCG) matrix, prices and discounts that do not exist are also searched for during the retrieval of valid pricing information, which decreases performance.

Therefore, only enter matrix sequences if they are used, and expire matrix sequences that are not used. This increases performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Number of discount levels

In the **Number of Discount Levels** field of the Pricing Parameters (tdpcg0100m000) session, you can enter the number of discount levels used to calculate or recalculate discounts in the Sales Control and Purchase Control modules.

For each discount level, LN performs a discount calculation during the following order line processes, which also result in order history postings:

- To create and update the order.
- To update order line data.

If a change is made to an order line, a positive and negative history record is logged. If prices and discounts are recalculated, the number of updates to the order line and history postings depend on price and discount settings.

The following calculation steps, which each result in updates and history postings, can be made for an order line:

1. Calculation of price and discount.
2. Calculation of cumulative prices.
3. Calculation of cumulative discounts.
4. Calculation of total discounts for each discount level (with a maximum of five).

Therefore, to save performance and limit data growth, reduce the number of discount levels to the minimum required levels. Pay attention to the total discounts because they result in additional loggings on top of the regular ones.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Combine items for Pricing

If prices and discounts are recalculated in the Price and Discount Recalculation Parameters (tdpcg0240s000) session, the **Apply Cumulative Price** and **Apply Cumulative Discounts** check boxes determine whether identical line items must be combined to retrieve a price or discount.

These check boxes can only be selected if the following check boxes are selected:

- The **Combine Items for Pricing** check box in the Pricing Parameters (tdpcg0100m000) session.
- The **Combine by Price Group** check box in the Matrix Definitions (tdpcg0110m000) session.

However, combining items to retrieve prices and discounts decreases performance. Therefore, only apply cumulative prices and discounts during the recalculation process if required. Often, you can obtain the same results for an order line by creating separate order delivery lines.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Update default price book

If the **Update Default Price Book** and **Update Default Purchase Price Book** check boxes are selected in the Pricing Parameters (tdpcg0100m000) session, for each sales price in the Items - Sales (tdisa0501m000) session or purchase price in the Items - Purchase (tdipu0101m000) session, an entry

is created in the default/supplier price book. For each price update in the Items - Sales (tdisa0501m000) and Items - Purchase (tdipu0101m000) sessions, an entry also is added to the default price book.

Automatically updating the default price books increases data growth. Therefore, only select these check boxes if you use date effective base prices. Also, if you use this functionality, run the Global Delete of Price Information (tdpcg0200m000) session regularly.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Price, rate, and discount control

In the Pricing Parameters (tdpcg0100m000) session, the following *Control* fields determine the following:

- **Price control**
Which sales price or purchase price must be used from price books found by a price matrix.
- **Freight rate control**
Which client freight rate or carrier freight rate must be used from freight rate books found by a freight rate matrix.
- **Discount control**
Which sales discount or purchase discount must be used from discount schedules found by a discount matrix.

You can select the following values for these fields:

Price control

- **First Price**
For a specific matrix definition, LN uses the first price found in the price matrix with the most recent effective date.
- **Lowest Price**
For a specific matrix definition, LN retrieves the first price found in the price matrix with the most recent effective date. However, if other relevant matrix definitions are applicable, LN continues searching these other price matrices for lower prices. LN uses the lowest price found in a matrix.

Freight rate control

- **First Rate**
For a specific matrix definition, LN uses the first freight rate found in the freight rate matrix with the most recent effective date.
- **Lowest Rate**
For a specific matrix definition, LN retrieves the first freight rate found in the freight rate matrix with the most recent effective date. However, if other relevant matrix definitions are applicable,

LN continues searching these other freight rate matrices for lower rates. LN uses the lowest freight rate found in a matrix.

Discount control

- **First Discount**
LN uses the first valid discount found in the level and ignores any other valid discounts. The first valid discount is the one with the lowest matrix sequence number. If more than one discount has the lowest sequence number, the first discount is the one with the latest effective date. When the first discount is found, the search for discounts stops.
- **Best Discount**
LN uses the best discount found for the level and disregards the matrix sequence priorities.
- **Accumulate**
All valid discounts are retrieved and returned as one aggregated percentage. The maximum aggregated discount percentage is 100.

For maximum system performance, to retrieve prices, select **First Price**, to retrieve freight rates, select **First Rate**, and to retrieve discounts, select **First Discount**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Use derived from item

In the **Use Derived from Item** fields on the **Sales** and **Purchase** tabs of the Pricing Parameters (tdpcg0100m000) session, you can define how LN retrieves default prices for customized items.

For these fields, you can select the following values:

- **Yes; Item - Derived-from Item**
First, the customized item is used to define the prices and discounts. Then, the derived-from item is used to define prices and discounts if a customer-specific or default price for an item is not found.
- **No; Only Item**
Only the customized item is used to define the prices and discounts.
- **Yes; Derived-from Item - Item**
First, the derived from item is used to define the prices and discounts. Then, the customized item is used to define prices and discounts if a customer-specific or default price for an item is not found.

If you do not use customized items, or if you want this field to have a minimum impact on system performance, set this field to **No; Only Item**.

Performance aspects

- Effect on CPU: Yes

- Effect on database growth: Not applicable

Recalculate prices and discounts

In the **Recalculate Prices and Discounts** fields on the **Sales** and **Purchase** tabs of the Pricing Parameters (tdpcg0100m000) session, you can define how LN recalculates prices and discounts for an order or order line.

For these fields, you can select the following values:

- **No**
Prices and discounts are not recalculated unless the user selects **Recalculate Price/Discounts** from the appropriate menu for the order (line) that requires recalculation.
- **Interactive**
After approving an order or an order line, the Price and Discount Recalculation Parameters (tdpcg0240s000) session is displayed. This session offers various recalculation options.
- **Automatic**
Prices and discounts are automatically recalculated after approving an order or an order line. To recalculate prices and discounts for sales order lines and prices for purchase order lines, you can also select **Recalculate Price/Discounts** from the appropriate menu.

By default, the **Recalculate Prices and Discounts** fields are set to **Automatic**. However, each time prices and discounts are recalculated, performance decreases and additional history records are logged if prices are changed. For companies without a complex pricing set up, such as those without a link between order lines and price breaks, it is advised to set these fields to **No** to save performance and limit data growth.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Promotion control

In the **Order Promotion Control** and **Line Promotion Control** fields of the Pricing Parameters (tdpcg0100m000) session, you can indicate which promotion must be used from promotions found by a promotion matrix for a sales order and a sales order line.

For these fields, you can select the following values:

- **First Eligible**
The first valid promotion is applicable.
- **All Eligible**
All valid promotions are applicable.
- **First Eligible plus All Exclusive**
The first valid promotion is applicable for which the **Exclusive Promotion** check box is selected in the Promotions (tdpcg0140m000) session.

- **All Exclusive**

All valid promotions are applicable for which the **Exclusive Promotion** check box is selected in the Promotions (tdpcg0140m000) session.

For maximum system performance, select **First Eligible**, because this stops LN searching for other promotions when a promotion is found.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

High priority supplier price book

If you defined a **Supplier Price Book** in the Pricing Parameters (tdpcg0100m000) session, you can select the **High Priority** check box for the supplier price book in the Price Book Lines (tdpcg0131m000) session. If this check box is selected, the price of the buy-from business partner/ ship-from business partner/ item combination has priority over the prices stored under the normal matrix sequence structure.

By assigning a high priority to the price book, you can avoid the concept of setting up matrix definitions, linking them to price books, giving them a search priority, and so on. This allows you to quickly retrieve and maintain prices for a buy-from business partner/ship-from business partner/ item combination. Therefore, if you select the **High Priority** check box, the search sequence for retrieving purchase prices is limited, which saves performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Procurement

Request for quotation checks

If you create a request-for-quotation (RFQ), LN can automatically carry out the following checks, which you can define in the Request for Quotation Parameters (tdpur0100m100) session:

- **Check on Actual Purchase Orders**
- **Check on Actual RFQs**
- **Check on Actual Contracts**
- **Check on Actual Schedules**

However, during RFQ entry, these automatic checks decrease performance. Therefore, only select these check boxes if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Requisition checks

a number of checks can be carried automatically by LN.

If you create a purchase requisition, in the Purchase Requisition Parameters (tdpur0100m200) session, you can define the following checks:

- **Check on Actual Purchase Orders**
- **Check on Actual RFQs**

However, during requisition entry, these automatic checks decrease performance. Therefore, only select these check boxes if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Recalculate additional costs

With the following parameters, you can define how additional costs are recalculated when a purchase order, a sales order, or a shipment is modified:

- The **(Re)calculate Additional Costs** field in the Purchase Order Parameters (tdpur0100m400) session.
- The **Recalculation of Additional Costs** field in the Sales Order Parameters (tdsls0100s400) session.

For these fields, you can select the following values:

- **No**
The additional costs are not recalculated. You can manually maintain additional costs in the Purchase Order Lines (tdpur4101m000), Sales Order Lines (tdsls4101m000), and Shipment (whinh4630m000) sessions.
- **Interactive**
LN asks you whether the additional costs must be recalculated. You can still manually maintain the additional costs in the Purchase Order Lines (tdpur4101m000), Sales Order Lines (tdsls4101m000), and Shipment (whinh4630m000) sessions, but if you let LN recalculate the additional costs, the manual changes can be lost.
- **Automatic**
You cannot maintain the additional costs. The additional costs are recalculated each time you leave the Purchase Order Lines (tdpur4101m000) session or the Sales Order Lines (tdsls4101m000) session, or when you freeze or confirm the shipment in the Shipment (whinh4630m000) session.

Each time additional costs are recalculated, history records are logged, which decreases performance. Therefore, if you want these fields to have a minimum impact on system performance, set this field to **No** or **Interactive**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Commingling

In the **Commingling for** group box of the Purchase Order Parameters (tdpur0100m400) session, you can define whether purchase orders can be commingled for a specific purchase order origin.

If you select the **Commingling for** check box for all origins, purchase orders that originate from these origins can be combined into a single purchase order. This reduces the number of purchase orders in your system, which means less data growth.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Search path for approved buy-from business partners

On the **Buy-from BP Search Orders** tab of the Purchase Order Parameters (tdpur0100m400) session and on the **Buy-from BP Search** tab of the Purchase Schedule Parameters (tdpur0100m500) session, you can enter priority level combinations based on which LN searches for approved business partners for purchase orders and purchase schedules.

These search levels are used by Enterprise Planning in the buy-from business partner selection process.

The following steps are completed:

1. Enterprise Planning sends the required item (group) and warehouse to Purchase Control.
2. Purchase Control searches for approved suppliers based on the **Search Path** defined in the Purchase Order Parameters (tdpur0100m400) or Purchase Schedule Parameters (tdpur0100m500) sessions.
3. Purchase Control sends all valid business partners to Enterprise Planning, after which Enterprise Planning selects a buy-from business partner.

Note

The **Search All Defined Levels** check box determines whether all defined levels must be searched for, or whether LN must stop the search once a valid business partner is found.

However, searching for business partners in many levels, decreases performance. To increase performance, limit the number of search levels and clear the **Search All Defined Levels** check box.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Sales

Inventory checks for sales quotations

If you create, confirm, or process sales quotations, LN can automatically carry out the following inventory checks:

- **Inventory Check during Quotation Line Entry**
- **Inventory Check during Confirmation**
- **Inventory Check during Processing**

You can define these checks in the Sales Quotation Parameters (tdsls0100s100) session.

However, these automatic inventory checks decrease performance. Therefore, to save system performance, select **No**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Minimum success percentage for time-phased inventory movements

In the **Minimum Probability % for Time Phased Inventory** field of the Sales Quotation Parameters (tdsls0100s100) session, you can enter a sales quotation's minimum success percentage for time-phased inventory movements. Quotation lines (original or alternative lines) with a success percentage lower than the value specified in this field are not inserted in the Planned Inventory Transactions (whinp1500m000) session.

However, a low success percentage means a low system performance. Therefore, do not enter a success percentage that is too low.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Sales quotation checks

If you create a sales quotation, LN can automatically perform the following checks:

- **Sales Orders**

- **Sales Contracts**
- **Sales Schedules**

In the Sales Quotation Parameters (tdsls0100s100) session, you can define these checks.

However, during sales quotation entry, these automatic checks decrease performance. Therefore, only select these check boxes if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Extended inventory check

During the sales quotation and the sales order (component) procedure, an extended check on available inventory for sales quotation lines, sales order lines, and sales order component lines can be performed, which means these lines receive a quotation promising status based on which delivery of the lines can or cannot be promised to the customer.

For an extended inventory check:

- Select the **Extended Inventory Check** check box in the Sales Order Parameters (tdsls0100s400) and Sales Quotation Parameters (tdsls0100s100) sessions.
- Define the **Extended Inventory Check** and **Inventory Check Moment** fields in the Sales Order Types (tdsls0594m000) session.

The **Inventory Check Moment** field affects performance and database growth as follows:

Value	Performance	Data growth
Never	Increase	No effect
Order Entry	No effect	Increase (for sales orders)
Batch	No effect	Increase (for sales orders)

However, these automatic inventory checks decrease performance. Therefore, to save system performance, select **No**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Planned inventory transactions for sales contracts

With the **Update Planned Inventory Transactions** check box in the Sales Contract Parameters (tdsls0100s300) session, you can indicate whether you want to log planned inventory transactions already when sales contract lines with delivery lines linked to it are activated.

However, planned inventory transactions result in additional postings, which decreases performance and increases data growth. Therefore, only select the **Update Planned Inventory Transactions** if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Planned warehouse orders for sales schedules

With the **Use Contracts for Schedules** check box in the Sales Schedule Parameters (tdsls0100s500) session, you can define whether a sales schedule must have a linked sales contract. In addition, if this check box is selected, planned warehouse orders are automatically generated or updated for approved sales schedules.

However, planned warehouse orders result in additional records, which decreases performance and increases data growth. Therefore, only select the **Use Contracts for Schedules** if required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Sales order checks

If you create a sales order, LN can automatically perform the following checks:

- **Margin Control**
- **Gross Margin Check Headers**
- **Gross Margin Check Lines**
- **Check on Actual Sales Quotations**
- **Time-Phased Inventory Check**

In the Sales Order Parameters (tdsls0100s400) session, you can define these checks.

However, during sales order (line) entry these automatic checks decrease performance. Therefore, only select these check boxes if required.

Performance aspects

- Effect on CPU: Yes

- Effect on database growth: Not applicable

Recalculate additional costs

With the following parameters, you can define how additional costs are recalculated when a purchase order, a sales order, or a shipment is modified:

- The **(Re)calculate Additional Costs** field in the Purchase Order Parameters (tdpur0100m400) session.
- The **Recalculation of Additional Costs** field in the Sales Order Parameters (tdsls0100s400) session.

For these fields, you can select the following values:

- **No**
The additional costs are not recalculated. You can manually maintain additional costs in the Purchase Order Lines (tdpur4101m000), Sales Order Lines (tdsls4101m000), and Shipment (whinh4630m000) sessions.
- **Interactive**
LN asks you whether the additional costs must be recalculated. You can still manually maintain the additional costs in the Purchase Order Lines (tdpur4101m000), Sales Order Lines (tdsls4101m000), and Shipment (whinh4630m000) sessions, but if you let LN recalculate the additional costs, the manual changes can be lost.
- **Automatic**
You cannot maintain the additional costs. The additional costs are recalculated each time you leave the Purchase Order Lines (tdpur4101m000) session or the Sales Order Lines (tdsls4101m000) session, or when you freeze or confirm the shipment in the Shipment (whinh4630m000) session.

Each time additional costs are recalculated, history records are logged, which decreases performance. Therefore, if you want these fields to have a minimum impact on system performance, set this field to **No** or **Interactive**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Sales order priority method

In the **Order Priority Method** field of the Sales Order Parameters (tdsls0100s400) session, you can select the method used to determine the order priority for sorting and delivering sales orders.

For this field, you can select the following values:

- **Simulation**
The priority is calculated based on the values of the fields defined in the simulation code.

- **Delivery Date**

The priority is calculated based on the delivery date.

If this field is set to **Simulation**, performance decreases. Therefore, set this field to **Delivery Date**, if possible.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Unused concepts, history, archiving, and deleting

Disable unused concepts

If you do not use a module or concept within Sales or Procurement, to save performance, disable the module or concept.

If you clear the following check boxes, the relevant module/concept is not used:

- **Requisitions**
Requisitions in the Procurement Parameters (tdpur0100m000) session.
- **Requests for quotation**
Requests for Quotation in the Procurement Parameters (tdpur0100m000) session.
- **Purchase contracts**
Contracts in the Procurement Parameters (tdpur0100m000) session.
- **Purchase schedules**
Schedules in the Procurement Parameters (tdpur0100m000) session.
- **Vendor rating**
Vendor Rating in the Procurement Parameters (tdpur0100m000) session.
- **Sales quotations**
Quotations in the Sales Parameters (tdsls0100s000) session.
- **Sales order installments**
Installments Implemented in the Sales Order Parameters (tdsls0100s400) session.
- **Sales contracts**
Contracts in the Sales Parameters (tdsls0100s000) session.
- **Sales schedules**
Schedules in the Sales Parameters (tdsls0100s000) session.
- **Commissions**
Commissions Implemented in the Commissions/Rebates Parameters (tdcms0100s000) session.
- **Rebates**
Rebates Implemented in the Commissions/Rebates Parameters (tdcms0100s000) session.

- **Promotions**
Promotions Implemented in the Pricing Parameters (tdpcg0100m000) session.

Next, these check boxes also affect performance:

- **Sales quotations**
Check on Actual Sales Quotations in the Sales Order Parameters (tdsls0100s400) session.
- **Purchase quotations**
Check on Actual Quotations in the Purchase Order Parameters (tdpur0100m400) session.
- **Vendor rating**
Check on Vendor Rating in the Purchase Order Parameters (tdpur0100m400) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Delete history data

With the following parameters, you can define how LN removes history data for purchase orders, purchase schedules, sales orders, and sales schedules:

- The **Method of Deleting Order History Data** field in the Purchase Order Parameters (tdpur0100m400) session.
- The **Method of Deleting Order History Data** field in the Sales Order Parameters (tdsls0100s400) session.

For these fields, you can select the following values:

- **By Order**
The order or schedule history data is removed by order or schedule, respectively.
- **By Order Line**
The order/schedule history data is removed by order/schedule line. If the last order/schedule line history of an order/schedule is removed, the order/schedule header history data is also removed.

If you set this field to **By Order Line**, more history data can be deleted. This decreases data growth and has the best effect on performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Log history data

With the following parameters, you can determine if, when, and how history data must be logged in Procurement:

Purchase requisitions	
Field	Session
Log Requisition History	Purchase Requisition Parameters (tdpur0100m200)
Purchase contracts	
Log Contract Transactions	Purchase Contract Parameters (tdpur0100m300)
Log Contract Line Transactions	Purchase Contract Parameters (tdpur0100m300)
Purchase schedules	
Log Schedule History	Purchase Schedule Parameters (tdpur0100m500)
Level of Intake Logging	Purchase Schedule Parameters (tdpur0100m500)
Log Actual Schedule Receipt History	Purchase Schedule Parameters (tdpur0100m500)
Purchase orders	
Log Order History	Purchase Order Parameters (tdpur0100m400)
Start Logging History at	Purchase Order Parameters (tdpur0100m400)
Level of Intake Logging	Purchase Order Parameters (tdpur0100m400)
Log Actual Order Receipt History	Purchase Order Parameters (tdpur0100m400)

With the following parameters, you can determine if, when, and how history data must be logged in Sales:

Sales quotations	
Field	Session
Log History	Sales Quotation Parameters (tdsls0100s100)
Sales contracts	

Log Contract Header Transactions	Sales Contract Parameters (tdsls0100s300)
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Log Contract Line Transactions	Sales Contract Parameters (tdsls0100s300)
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Sales schedules

Log Schedule History	Sales Schedule Parameters (tdsls0100s500)
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Level of Intake Logging	Sales Schedule Parameters (tdsls0100s500)
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Log Actual Schedule Delivery History	Sales Schedule Parameters (tdsls0100s500)
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Sales orders

Log Order History	Sales Order Parameters (tdsls0100s400)
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Log EDI Order History	Sales Order Parameters (tdsls0100s400)
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Start Logging History at	Sales Order Parameters (tdsls0100s400)
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Level of Intake Logging	Sales Order Parameters (tdsls0100s400)
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Log Actual Order Delivery History	Sales Order Parameters (tdsls0100s400)
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Log Component History	Sales Order Parameters (tdsls0100s400)
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Sales order installments

Field	Retrieved from session
Log Order History	Sales Order Parameters (tdsls0100s400)
Log EDI Order History	Sales Order Parameters (tdsls0100s400)
Start Logging History at	Sales Order Parameters (tdsls0100s400)
Level of Intake Logging	Sales Order Parameters (tdsls0100s400)

Logging history data decreases performance and increases data growth. Therefore, the following applies to logging history data:

- Only log history if required.
- Regularly archive and delete history data.

Note

Purchase order and sales order/schedule history are not only used for future analysis, but also for reconciliation, retrobilling, commissions and rebates, and statistics. To increase performance and decrease data growth, after the history records are processed for commissions, rebates, and statistics, and after the reconciliation period is closed, archive and delete the relevant purchase orders and sales orders.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Delete order data

For received purchase orders, sales orders, and sales schedules, you can define the method used to remove the order or schedule data.

- **Received purchase orders**
To specify how to use the Archive and Delete Purchase Orders (tdpur4224m000) session to remove purchase order data, use the **Delete Order Data if Received Completely** field in the Purchase Order Parameters (tdpur0100m400) session.
- **Sales orders and schedules**
To specify how to use the Archive and Delete Sales Orders (tdsls4224m000) session or the Archive and Delete Sales Schedules (tdsls3224m000) session to remove sales order or sales schedule data, use the **Method of Deleting Order Data** field in the Sales Order Parameters (tdsls0100s400) session.

For these fields, you can select the following values:

- **By Order**
The order/schedule data is removed by order or schedule. LN checks whether the entire order or schedule can be deleted. Order header data and order lines are only removed if no back order quantities exist.
- **By Order Line**
The order or schedule data is removed by order/schedule line. For each order/schedule line, LN checks whether it can be deleted. If no back order quantities exist for an order line, the order line is removed. If the last order or schedule line of an order/schedule is removed, the order/schedule header data is also removed.

If you set this field to **By Order Line**, you can remove order or schedule data at an earlier time. This reduces data growth and saves performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Delete and archive (history) data

To save disk space and system performance, delete, archive, or delete and archive (history) data regularly.

In the following sessions, you can delete, archive, or delete and archive data:

- Archive and Delete Requisition History (tdpur2205m000)
- Archive and Delete Request for Quotation History (tdpur1204m000)
- Delete/Terminate Purchase Contracts (tdpur3203m000)
- Archive and Delete Purchase Contract History (tdpur3202m000)
- Archive and Delete Purchase Orders (tdpur4224m000)
- Archive and Delete Purchase Order/Schedule History (tdpur5201m000)
- Archive and Delete Purchase Schedules (tdpur3224m000)
- Archive and Delete Purchase Revisions (tdpur3222m200)
- Archive and Delete Sales Quotation History (tdsls1203m000)
- Archive and Delete Sales Contract History (tdsls3202m000)
- Archive and Delete Sales Orders (tdsls4224m000)
- Archive and Delete Sales Releases (tdsls3209m000)
- Archive and Delete Sales Schedules (tdsls3224m000)
- Archive and Delete Sales Order/Schedule History (tdsls5201m000)
- Archive/Delete Statistics (tdsta2250m100)

Note

For more information, refer to *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Cost control levels

To select various cost control levels by project, use the **Cost Control Level** and **Cost Control** fields of the Project - Cost Control Levels (tppdm6102m000) session. To maintain system performance and avoid unnecessary data growth, only select cost control levels that have a real business value.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Generate budget cost analyses

To generate budget cost analyses for projects, use the Generate Budget Cost Analysis (tpptc3200m000) session. To limit data growth, only include relevant budget lines in your budget cost analysis. To include the required budget lines in your budget cost analysis, select the following check boxes:

- **Budget with Status Free**
- **Budget with Status Actual**
- **Budget with Status Final**

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Generate control data

To generate a control budget based on an actual budget of one or more projects, use the Generate Control Data (tpptc1230m000) session.

If you select the **Net Change Run** check box, the generating process takes less time to finish.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Generate planned PRP orders

In the Generate Planned PRP Orders (tppss6200m000) session, to save system performance when generating planned PRP orders, consider selecting the following check boxes:

- **Ignore Rescheduling Messages**
If rescheduling messages are irrelevant, select this check box
- **Process only the Net Changes in the PRP-Run**
A net change PRP run will take less time than a complete generate-planned PRP-order run.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Log commitments

Order commitments are logged to projects when a purchase order is approved, and are reversed when the goods are received. Commitments are useful in tracking future payables on a project.

If you do not require detail tracing of the future payables, to limit data growth, in the **Log Commitments (Purchase Transactions)** field of the Project Parameters (tppdm0100s000) session, select Delivery or Not.

However, once selected, you cannot change the selected option after going live. Even if changed, it will have severe consequences; therefore, you must decide between limiting data growth or optimum functionality.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Delete and archive Project order data

To limit the available data in the cost history, regularly archive closed projects.

For more information, refer to the User's Guide for Archiving (U9352* US).

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Job mode

You can run the following sessions in job mode:

- Generate Control Data (tpptc1230m000).
- Generate Planned PRP Orders (tppss6200m000).
- Transfer Planned PRP Purchase Orders (tppss6230m000).
- Global Approving (tpppc4200m000).
- Process Transactions (tpppc4802m000).
- Build Actual Cost Control (tpppc4803m000).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Project history

In Project, you can post budgets, costs, and revenues to history. Posting costs and revenues to history is mandatory; posting budgets to history is optional.

If you do not want to keep track of the changes in budget lines, turn off this option to limit database growth; to do so, use the **Log History of Budget** check box in the Project Budget Parameters

(tpptc0100s000) session. Note that if the history is not logged, you cannot select the **Net Change Run** check box in the Generate Control Data (tpptc1230m000) session.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Close projects

If all logistic and financial transactions regarding a project are completed, close the project. If the status is not **Closed**, many process sessions will take unclosed projects into account when processing data, although work is no longer carried out on the projects; this affects performance. Start the session used to close a project from the appropriate menu of the Projects (tppdm6100m000) session, .

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Labor rate search path

To prevent unnecessary searching for the correct labor rate, correctly set the labor rate search paths for budget and costs. In the Projects (tppdm6100m000) session, specify the labor rate search paths in the **Path for Hours Labor Rate** field and the **Path for Budget Labor Rate** field.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Print actual costs

In Project, running the Print Cost Control (tpppc4411m000) session to print actual costs is a performance critical process. To improve the performance of this session, you can use parallel processing.

To prepare this session for parallel processing:

1. Run the Print Cost Control (tpppc4411m000) once.

2. Start the Parallel Processing Configuration (ttaad7520m000) session, and double-click the Print Cost Control (tpppc4411m000) entry.
3. In the **Servers** field, specify 5.
4. In the **Mode** field, select the appropriate value.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Parallel processing concept

To improve processing speed, some planning runs can run in parallel on multiple processors (CPUs). To do this, set these sessions to run in multiple bshells. Each bshell can run on its own CPU.

This section describes the general concept. For information on the setup, refer to *To set up parallel processing for planning* (p. 56).

Application of the parallel processing concept

The sessions for which parallel processing is available include these planning sessions:

- Generate Order Planning (cprp1210m000)
- Initialize, Roll, and Update Scenario (cprpd4200m000)
- Generate Pegging Relations (cprp0240m000)
- Generate Planned Supply based on Forecast (cpvmi1211m000)

Note

The process that transfers planned orders to the execution level can only use one bshell.

Distribution of items across bshells

The order planning process takes the plan item's phase number into account. The planning of plan items with phase number 1 cannot start until all plan items with phase number 0 have been planned; otherwise, some dependent demand might be missing for the second level.

If you use multiple bshells, LN completes the following steps:

1. LN dynamically calculates an optimal workload for the bshell, but the **Workload per Server** field in the Performance Parameters (cpcom0100m000) session restricts this number to a maximum, such as 500 different plan items.

2. LN assigns a batch of plan items with phase number 0 to the first bshell. LN assigns a second batch of plan items with phase number 0 to the second bshell, and so on; in this way, all plan items with phase number 0 are distributed across the bshells.
3. To plan the assigned plan items, all available bshells work in parallel.
4. When all plan items with phase number 0 have been planned, LN assigns batches of plan items with phase number 1 to the bshells, followed by the plan items with phase number 2, and so on.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

To set up parallel processing for planning

To improve processing speed, some planning runs can run in parallel on multiple processors (CPUs). To do this, set these sessions to run in multiple bshells. Each bshell can run on its own CPU.

This section describes the setup. For general information on the concept, refer to *Parallel processing concept* (p. 55).

To set up parallel processing, perform the following steps:

1. Start the Performance Parameters (cpcom0100m000) session.
2. Select an appropriate value for the **Workload per Server** field.
For more information, refer to *Workload per server* (p. 58).
3. Select or clear the **Workload Based on Operations** check box, as appropriate.
For more information, refer to *Workload based on operations* (p. 58).
4. Select or clear the **Dynamic Workload Calculation** check box, as appropriate.
For more information, refer to *Dynamic workload calculation* (p. 59).
5. Select the **Parallel Processing** check box for the sessions you want to run on multiple bshells.
The first time that you select the **Parallel Processing** check box for a session, that session appears in the Parallel Processing Configuration (ttaad7520m000) session.
6. Start the Parallel Processing Configuration (ttaad7520m000) session, and double-click the session that must run on multiple bshells.
7. In the **Servers** field, specify the number of bshells, that is, the number of parallel processes, available for that session.
8. In the **Mode** field, select the appropriate value.

Note

Each time you start a planning run, you can select the **Parallel Processing** check box in the planning sessions. However, you must only set the number of servers in the Parallel Processing Configuration (ttaad7520m000) session once.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Table boosters

To speed up the planning process, you can load particular tables into memory; this method reduces the number of times a calculation must fetch information from a permanent storage device.

To speed up the planning run in Enterprise Planning, you can instruct the system to load the particular tables into memory when the planning is run. To see for which tables a table booster is available, start the Table Boosters (tcmcs0598m000) session.

Some examples of tables for which table boosters exist are the following:

- tcmcs001 (Units).
- tcmcs016 (Seasonal Patterns).
- tcmcs017 (Seasonal Pattern Factors).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Display time interval

To specify the amount of time, in seconds, LN waits before it displays new information in the progress bar of the Generate Order Planning (cprp1210m000) session, use the **Display Time Interval** field in the Performance Parameters (cpcom0100m000) session.

Sessions that process large volumes of data usually display some runtime information, which lets you monitor the session's progress. However, if the screen is often refreshed, system performance can be affected.

It is recommended to set this field to a large value.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Workload per server

To define the number of items included in each batch that is distributed across multiple bshells, use the **Workload per Server** field in the Performance Parameters (cpcom0100m000) session.

The parallel processing solution dynamically calculates the optimal workload per server. The number you specify in the **Workload per Server** field is the upper limit.

Recommendations:

- Do not specify a number that is too low.
- In general, 500 is a reasonable value for this parameter.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Workload based on operations

To prescribe how LN must estimate the workload of planning a plan item, use the **Workload Based on Operations** check box in the Performance Parameters (cpcom0100m000) session.

If this check box is selected, the criterion LN uses for workload distribution across the bshells is the routing composition of each item. The more operations a routing of an item is composed of, the more weight it has.

Recommendations:

- If the number of operations in item routings varies considerably between items, select this check box to increase the system performance; otherwise, clear this check box.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Dynamic workload calculation

If the **Dynamic Workload Calculation** check box in the Performance Parameters (cpcom0100m000) session is selected, the total workload is equally distributed across the available bshells.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Round values

If the **Round Values** check box in the Planning Parameters (cprpd0100m000) session is selected, LN rounds all quantities in a planning run.

The rounding is based on the unit's rounding factor.

Generally, you must use rounding to ensure that quantities are whole numbers. For example, to avoid an order for 2.5 light bulbs, which would make no sense, you set the rounding factor for that item's inventory unit to 1.0.

The rounding of quantities can reduce the system performance of a planning run by over 10 %.

Recommendation:

- If you are confident that you do not require rounded quantities, for example, if the planning run is only a simulation, clear the **Round Values** check box.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Scenario start and finish date

To define the scenario's start date and finish date, use the **Scenario Start Date** and **Scenario Finish Date** fields in the Scenarios (cprpd4100m000) session.

The length of time between a scenario's start date and finish date affects the system performance if you roll the scenario. The rolling process recalculates all master-plan data from plan periods to separate days; then, the rolling process recalculates the data from days to plan periods.

The recalculation process also includes open orders with a start date before the start date of the scenario. The orders between the start date and the current date form the history of the master plan. To check

what has happened in the previous periods, use this historic data. However, a longer history reduces the system performance of the planning process.

The goods flow before the scenario's start date is aggregated to one transaction at the scenario start date. Before the scenario's start date, no pegging information is available, because all transactions before the scenario's start date are anonymous.

Recommendations:

- Do not make the period between the scenario's start date and finish date too long.
- Do not set the scenario's start date too far before the current date.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Start of fixed lead-time horizon

To define a plan item's fixed lead-time horizon, use the **Operations Time Fence** field in the Items - Planning (cprpd1100m000) session. The **Operations Time Fence** field is used only for planned production orders.

The fixed lead-time horizon is the time period for which Enterprise Planning uses a fixed lead time to plan orders.

Before the fixed lead-time horizon, Enterprise Planning plans on the basis of routing data. Beyond the fixed lead-time horizon, Enterprise Planning plans orders by using a fixed lead time.

The fixed lead-time horizon applies especially to manufactured items. Beyond the fixed lead-time horizon, the planning run does not calculate or store operations during the planning run. Instead, the planning run uses the plan item's fixed lead time to calculate the start and finish date of planned orders. The orders without operations cannot be transferred to Job Shop Control module; which means the planned production orders can be transferred, if the order is within the fixed lead time horizon.

The fixed lead time is taken from the order lead time specified in the Items - Production (tiipd0101m000) session, which is calculated based on the routing and economic order quantity.

Planning with a fixed lead time is faster than planning on the basis of routing data, but the results are less precise.

For the planned purchase orders, you must define the plan item's fixed lead-time horizon, in the Items - Purchase Business Partner (tdipu0110m000) session. The lead time is defined in the **Lead Time Horizon (Days)** field.

To make a rough and faster calculations for the planned purchase orders, you can define the calculated lead time in the **Calculated Lead Time (Days)** field.

Within the lead time horizon, you can also define the following for a planned purchase orders.

- **Internal Processing Time**
- **Safety Time**
- **Supply Time**
- **Transportation Time (Days)**

Recommendation:

- Do not make the number of days in the **Operations Time Fence** field too large.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Order horizon

To define a plan item's order horizon, use the **Order Horizon** field in the Items - Planning (cprpd1100m000) session.

The order horizon is the time period for which Enterprise Planning uses order-based planning to plan supply.

The Generate Order Planning (cprpd1210m000) session, that performs the order-based planning, also performs the capacity planning for the planned orders. To calculate the capacity utilization, LN matches the routing lead times against the calendar; this takes a lot of processor time and is performance sensitive. If the order horizon is very long, the planning run's performance slows down.

A reasonable minimum value for the order horizon is the cumulative order lead time.

When you set or change the **Order Horizon** field, you can run the Check Horizons (cprpd1200m000) session to check and optionally adjust the order horizon. For details, refer to the field Help of the **Order Horizon** field.

Recommendations:

- Do not make the number of days in the **Order Horizon** field too large.
- To check the value of the **Order Horizon** field, use the Check Horizons (cprpd1200m000) session field.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Planning horizon

To define a plan item 's planning horizon, use the **Planning Horizon** field in the Items - Planning (cprpd1100m000) session.

The planning horizon is the time period for which LN maintains planning data for an item.

If you maintain an item master plan for the plan item, the Generate Master Planning (cprmp1202m000) session calculates, among other things, the critical capacity requirements to generate the resource master plans; this calculation takes a considerable amount of system performance. The planning horizon determines over what period LN must calculate the master plans and, therefore the required calculation time.

When you set or change the **Planning Horizon** field, you can run the Check Horizons (cprpd1200m000) session to check and optionally adjust the order horizon. For details, refer to the field Help of the **Planning Horizon** field.

Recommendations:

- Do not make the number of days in the **Planning Horizon** field too large.
- To check the value of the **Order Horizon** field, use the Check Horizons (cprpd1200m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

CTP horizon

To define a plan item 's CTP horizon, use the **CTP Horizon** field in the Items - Planning (cprpd1100m000) session.

The CTP horizon is the date until which LN performs ATP and CTP checks.

After the ATP/CTP horizon, LN assumes that capacity and components are infinite.

If you make the CTP horizon longer, the system performance of the ATP check decreases.

Recommendation:

- Do not make the number of days in the **CTP Horizon** field too large.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Maintain master plan

If you select the **Master Plan** field in the Items - Planning (cprpd1100m000) session, LN maintains an item master plan and possibly also channel master plans for the plan item.

The maintenance of item master plans and channel master plans requires storing a lot of data.

If many plan items have master plans, the online update of master plans takes considerable system performance. For each transaction, such as the generation of an order or the issue of goods, LN must immediately update all fields of the master plan over the entire master-planning horizon. Examples of these fields are the projected inventory, ATP, and cumulative ATP.

If many plan items have master plans, the Initialize, Roll, and Update Scenario (cprpd4200m000) session takes a lot of system performance to roll or initialize a scenario.

The following situations can be reasons to maintain an item master plan:

- You need to create a demand forecast for the plan item.
- The production of the item is a bottleneck in the factory.
- The item is situated on the customer order decoupling point, that is, the item is produced on the last large stock point in the production process or logistical process.

For other plan items, you do not need a master plan.

Note

LN can calculate a plan item's available-to-promise (ATP) quantity or the capable-to-promise quantity without a master plan. You do not require a master plan for that purpose.

Recommendation:

- Unless you really require the functionality, clear the **Master Plan** field.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Maintain resource master plan

A resource master plan is a time-phased overview of the capacity use at a certain resource. A resource in Enterprise Planning represents a work center.

If you initialize a scenario, LN generates a resource master plan for each resource for which the **Maintain Resource Master Plan** field in the Resource (cprpd2100m000) session has been selected.

Critical in CTP

During a capacity CTP check, LN must check the cumulative capacity CTP of all resources in the plan item's routing for which the **Critical in CTP** check box was selected.

If LN maintains resource master plans for more resources, it takes more system performance to initialize a scenario.

Recommendation:

- Unless you really require the functionality, clear the **Maintain Resource Master Plan** field.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Operation storage horizon

To define a resource's operation storage horizon, use the **Operations Storage Horizon** field in the **Maintain Resource Master Plan** session.

A resource's operation storage horizon is the number of future working days for which LN stores the operations for planned orders.

For planned orders beyond the operation storage horizon, you cannot analyze the capacity use of planned orders, and you cannot transfer the planned orders to the execution level.

The operations storage horizon must be at least as long as the longest of the time fences of the plan items produced at the involved resource.

A larger value of the operation storage horizon increases the data growth.

Recommendation:

- Do not make the number of days in the **Operations Storage Horizon** field too large.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Fixed order quantity

If you use a fixed order quantity for a particular item, every order for that item will have the same order quantity. If you require a larger quantity, LN generates multiple orders for the same item and the same due date.

Example

Demand	2000
Fixed Order Quantity	100
Result	20 planned orders with quantity of 100

Example 1: Reasonable values

If you have a high volume demand and you choose a small fixed order quantity, LN generates many planned orders.

Demand	100000
Fixed Order Quantity	10
Result	10000 planned orders with quantity of 10

Example 2: Extreme values

To define a fixed order quantity for manufactured items, use the **Fixed Order Quantity** field in the Items - Ordering (tcibd2100m000) session.

To define a fixed order quantity for purchased items, use the **Fixed Order Quantity** field in the Item - Purchase Business Partner (tdipu0110m000) session.

The Plan Items - Optimized Lot Sizes (cprao3110m000) session calculates the optimal lot sizes.

During the planning process, LN stores the requirements and planned orders for each individual plan item in memory. If requirements are very large, but the lot sizes are very small, the planning run requires considerable performance.

Recommendations:

- If you use a fixed order quantity, make the fixed order quantity sufficiently large. Take the expected volume for the item into account.
- To calculate the optimal lot sizes, use the Plan Items - Optimized Lot Sizes (cpao3110m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Pegging horizon

In the Planning Parameters (cprpd0100m000) session, you can enter a pegging horizon in the **Pegging Horizon** field.

The pegging horizon is the number of days into the future for which the order-based planning generates pegging relations. LN records no pegging relations for transactions with a transaction date beyond this horizon.

A shorter pegging horizon can give better system performance, but offers less pegging information.

Recommendations:

- If you only use the pegging information for part of the order horizon, set the **Pegging Horizon** field to that part of the order horizon.
- If you do not use pegging information, set the **Pegging Horizon** field to 0.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Top-down item selection

In the Generate Order Planning (cprp1210m000) session, if you select the **Include Child Items** check box, Enterprise Planning extends the item selection and takes into account the multi-level structure of the bill of material (BOM), supplying relationships, and the relations between generic items and the possible product variants.

For the range of plan items you specified in the **From Plan Item** and **To Plan Item** fields, or for any item that LN includes in the selected range because of the bottom-up item selection, LN extends the item selection with the following:

- Components in the bill of material.
- Supplying items you specified in the Supplying Relationships (cprpd7130m000) session.
- Components in the generic bill of material, for the generic items included in the specified item range.
- Derived-from items; the generic or normal items you use to create project items in the Project Control module of Manufacturing, of any project items included in the specified item range.

If you perform order planning for a single plan item, the **Include Child Items** check box offers a useful option. However, if you perform order planning for *all* plan items (the full range), the setting of the **Include Child Items** check box makes no difference for the end result. In that case, selecting the **Include Child Items** check box only slows down the planning run.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Number of plan items

To plan the supply of an item based on the anticipated demand for that item, set the item's order system to **Planned** to create a plan item and maintain the relevant data in the Items - Planning (cprpd1100m000) session.

You can create one plan item for each combination of item code and cluster of warehouses.

The Enterprise Planning package plans the supply for these plan items.

Order systems and methods exist that do not use plan items, such as statistical inventory control (SIC), time-phased order point (TPOP), Kanban, and order controlled/Single.

You can also make the item available on the job shop as floor stock.

If the number of plan items increases, performance of the planning process decreases. It is not usually necessary to create a plan item for every item and every cluster.

Recommendations:

- For every item, consider which planning method is most suitable, such as statistical inventory control (SIC), time-phased order point (TPOP), Kanban, or order controlled/Single.
- Only use Enterprise Planning if you need the planning algorithms of that package.
- If an item is a material in production and the item is cheap, make the item available as floor stock.

- Do not create a plan item for an item in every cluster. Only create the plan item for the clusters you really require.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Component CTP bucket

To define the component CTP bucket, use the **Component CTP bucket** field in the Planning Parameters (cprpd0100m000) session. The component CTP bucket is the level of detail on the time scale for the component CTP check.

Example

If you set the **Component CTP bucket** field to 1 day and Enterprise Planning finds you have insufficient ATP to promise an ordered quantity on the requested order date, Enterprise Planning checks component availability to determine whether the order can be promised for the next day, and so on.

If you set the **Component CTP bucket** field to 1 *hour* and Enterprise Planning finds you have insufficient ATP to promise an ordered quantity on the requested order date, Enterprise Planning checks component availability to determine whether the order can be promised *one hour later*, and so on.

To make all component CTP buckets equal to the plan periods, set the unit field to **Plan Period Definition**.

A shorter value for this field increases order-promising accuracy, but slows down system performance.

Recommendations:

- Carefully consider the required accuracy for the component CTP check.
- Do not set the component CTP bucket to *one hour*, unless you actually do order promising on hour level.
- If order promising on week level is sufficient, set the component CTP bucket to 7 days.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Online ATP update

If the ATP is to be used to support order acceptance, it must be kept up-to-date. To update the ATP, choose one of the following methods:

- Online update, carried out when a planned or actual inventory transaction is recorded.
- Offline update, carried out when the item master plan is updated.

To switch the online ATP update on or off for *all* plan items, use the **Online ATP Update in EP** check box in the Planning Parameters (cprpd0100m000) session.

If the **Online ATP Update in EP** check box is selected, to switch the online ATP update on or off for a particular plan item, use the **Online ATP Update** check box in the Items - Planning (cprpd1100m000) session.

Note

If you use ATP functionality for an item that has no master plan, no online ATP updates are required; in this case, the ATP is always computed online.

Online updating of ATP requires additional system performance, especially during sales order entry.

Recommendations:

- If you do not use the available-to-promise functionality, clear the **Online ATP Update in EP** check box in the Planning Parameters (cprpd0100m000) session.
- If a plan item has no master plan, do not select the **Online ATP Update** check box in the Items - Planning (cprpd1100m000) session for that plan item unless you use the available-to-promise functionality for that plan item.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

CTP check for sales

If you select the **CTP Check for Sales** check box in the Planning Parameters (cprpd0100m000) session, LN carries out a capable-to-promise (CTP) check when a sales order for an item is closed.

CTP checks require additional system performance during the sales order entry procedure.

Recommendation:

- If you do not require the capable-to-promise (CTP) functionality, clear the **CTP Check for Sales** check box in the Planning Parameters (cprpd0100m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Online phase-number update

If you select the **Online Phase Number Update** check box in the Planning Parameters (cprpd0100m000) session, LN immediately updates the phase numbers of items and plan units when a change occurs in a bill of material (BOM) or bill of critical material (BCM).

To separately update the phase numbers, use the Compute Phase Numbers (cprpd6200m000) session.

During a master-based planning run or an order-based planning run, LN checks whether the phase numbers are correct; if an incorrect phase number is encountered, LN updates the phase numbers and restarts the planning run, if necessary.

If you select the **Online Phase Number Update** check box, LN must do more work if you modify a bill of material (BOM) or bill of critical material (BCM). Therefore, LN needs more time to process these modifications.

If you do not update the phase numbers online and you have not used the session to compute phase numbers, a planning run can encounter incorrect phase numbers; this situation delays the planning run. Master-based planning runs and order-based planning runs can suffer from this situation.

Recommendations:

- Clear the **Online Phase Number Update** check box in the Planning Parameters (cprpd0100m000) session and, if you perform a planning run after modifying a BOM or BCM, run the Compute Phase Numbers (cprpd6200m000) session first.
- If you do not want to run the Compute Phase Numbers (cprpd6200m000) session before every planning run if a BOM might have been modified, select the **Online Phase Number Update** check box in the Planning Parameters (cprpd0100m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Online update resource master plan

If you select the **Online Update Resource Master Plan** check box in the Planning Parameters (cprpd0100m000) session, the system performance for master-based planning runs and order-based planning runs decreases.

Recommendation:

- Clear the **Online Update Resource Master Plan** check box in the Planning Parameters (cprpd0100m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

BOM master data

Number of BOM levels

If you set up a BOM, limit the number of BOM levels. More BOM levels means more complexity, which makes performance worse and increases data growth.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Floor stock

To reduce the number of transactions, you can define BOM material as floor stock; this decreases data growth and has a positive effect on performance.

To define a specific material as floor stock, select the **Floor Stock** check box in the Items - Warehousing (whwmd4500m000) session for that material. Floor stock items are delivered to the job shop using Kanban, which reduces the number of transactions. To add the costs of floor stock, use surcharges.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Phantoms

Limit the use of phantoms. If you add phantoms to the BOM, creating and managing production orders takes additional time.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Routing master data

Material for multiple operations

If the same material is used in several sequential operations, it is recommended to issue the material at the start of the production order. Therefore, in the Bill of Material (tibom1110m000) session, enter 0 (zero) in the BOM line's **Operation** field. To improve performance, do *not* define a material-routing relationship in the BOM Line - Material-Routing Relationships (tibom0140m000) session.

To issue the material required for a phantom at the start of the production order, in the Items - Production (tiipd0101m000) session, set the **Turn Operation 0 into First of** field to **Order**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Micro routing

A routing can consist of several operations. From a performance and data growth perspective, every additional operation requires additional planning effort.

If you do not need operations for planning reasons, but only want to provide information about operations to the people on the work floor, use a microrouting. Micro routings can provide stepwise information without the need to create additional operations.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Production order without operations

For production orders, it is not always required to set up operations. Production orders without operations result in faster planning.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Backflushing

Backflushing method

If, in the Production Order Parameters (tisfc0100s000) session, the **Backflushing Method** field is Automatic, material is automatically backflushed every time quantities or orders are reported as completed. Automatic backflushing slows down the performance of the completion process.

To carry out the backflushing process in a batch job during quiet hours, set the **Backflushing Method** field to Manual.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Backflushing without warehouse orders

If the **Backflushing without Warehouse Orders** check box in the Production Order Parameters (tisfc0100s000) session is selected, no warehouse orders are created during the backflushing process; this improves the performance of the backflushing process and the production order releasing process, and database growth in Warehousing is decreased.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Backflushing in jobs

If the **Backflushing Method** field in the Production Order Parameters (tisfc0100s000) session is Automatic, backflushing is performed every time a quantity is reported as complete. If you select Interactive, you can choose whether to perform backflushing after a quantity is completed.

If the **Backflushing Method** field is **Manual**, to backflush material use the Backflush Materials and Hours (tisfc0220m000) session . If you select the **Completed Operations Only** check box, backflushing is only performed after an operation is completed, instead of after every completed quantity. If you create a job, you can perform backflushing during the off hours.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Project Control

Standard-to-order items in Project Control

If you generate a PCS project from a sales order in the Generate (Project PCS) Structure for Sales Orders (tdsls4244m000) session, you must select a method to generate the item structure for items with order policy **Yes**:

- **Standard-to-Order**
- **Engineer-to-Order**

If you select **Standard-to-Order**, LN does not create a customized BOM or a customized routing at any level in the product structure; this means that you can no longer change the BOM or routing for a specific project. Note that in the Projects (tipcs2101m000) session, the **Engineering Allowed** check box is cleared.

If you select **Standard-to-Order** instead of **Engineer-to-Order**, the database growth is limited, which improves system performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Interim results by cost component

To calculate interim Cost of Goods Sold (COGS) and interim revenue for a PCS project, use interim revenue recognition.

The setting of the **Post Interim COGS and Revenues by Cost Component** check box in the Project Control Parameters (tipcs0100m000) session determines how the **Post Interim COGS and Revenues by Cost Component** check box in the Project Details (tipcs2130m000) details session is set for PCS projects generated from a sales order line; it does this by using the Generate (Project PCS) Structure for Sales Orders (tdsls4244m000) session.

If this check box is selected, the interim COGS is specified by detailed cost components. To view and maintain the detailed interim COGS, use the COGS by Cost Component (tipcs3191m000) session.

If this check box is cleared, the interim COGS is not specified by detailed cost components; instead, the interim COGS is posted on the cost component specified in the **General Cost Component for Interim Postings** field in the Project Control Parameters (tipcs0100m000) session.

If you clear the **Post Interim COGS and Revenues by Cost Component** check box, database growth is decreased, which improves system performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

PCF without PCS

The Product Configuration (PCF) module is very flexible and can be used to set up very complex structures. However, when the structure becomes more complex, system performance gets worse.

You can use PCF without using PCS projects in Manufacturing. The number of transactions in PCS decreases, which improves system performance. To set up PCF without Project Control (PCS), create items in the Items (tcibd0501m000) session with item type **Generic**. The item policy of the items defined in the Items - Ordering (tcibd2100m000) session must be **No**.

Product configurator version

The Product Configuration (PCF) module is flexible and can be used to set up very complex structures. However, when the structure becomes more complex, system performance gets worse.

To specify the product configurator version, use the Product Configuration Parameters (tipcf0100m000) session. If you select **Object Version** in the **Product Configurator Version** field, system performance improves significantly.

The **Object Version** is available for the operational situation. During runtime, constraints are directly carried out by the product configurator as objects, without the need to repeatedly read in and interpret or compile constraints. Compared to the interpreter version, the object version considerably improves performance, especially in complex constraints. Prior to using the object version, all constraints must be compiled in the Compile Constraints by Configurable Item (tipcf2201m000) session. For this purpose, you need the compiler 'bic6.2' of **Enterprise Server**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Transaction processing in ASC

In the Assembly Control Parameters (tiasc0100m000) session, you can select in the **Transaction Processing** field at which level transactions are processed:

- **Line Station Based**
- **Order Based**

From a performance and database growth perspective, the setting **Line Station Based** is preferred for high-volume environments. For each line station, the line-station order data is collected in one daily clustered line-station order (CLSO). Processing is carried out at an aggregated (line station) level. You

will receive production results for each period when you use line-station-based transaction processing. Therefore, the number of transactions is significantly reduced, which improves system performance.

Note

You can only set this parameter during implementation.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Job Shop Control

Financial transactions by work center

In the Production Order Parameters (tisfc0100s000) session, to determine whether you want to store financial results in Job Shop Control by work center or by production order, use the **Financial Transactions by Work Center** field:

- If the **Financial Transactions by Work Center** check box is selected, financial results are stored by work center. Efficiency results are analyzed by work center. Additional postings take place (more end-item unit cost data), which worsens performance.
- If the **Financial Transactions by Work Center** check box is cleared, financial results are stored by production order. All financial transactions are posted on the production order calculation office, which means that no financial transactions for WIP transfers are required. The results are calculated on calculation office level, which is less detailed than on work center level. Therefore, clearing the **Financial Transactions by Work Center** check box improves performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Transfer WIP method

If in the Production Order Parameters (tisfc0100s000) session, the **Financial Transactions by Work Center** check box is selected, use the **Transfer WIP method** field to specify when the WIP is transferred from one work center to the next. You can choose between the following options:

- **Always**
The transfer is performed when a quantity is reported as complete. The delivering work center must be different from the receiving work center,

- **Only upon Completion**

The transfer is performed when the whole operation is reported as completed. The delivering work center is different from the receiving work center.

If the setting is **Always**, every time a quantity is reported as completed, financial transactions take place. If the setting is **Only upon Completion**, financial transactions only take place once, when the whole operation is completed. Therefore, the setting **Only upon Completion** results in less transactions, which means less database growth and a better performance of the production order completion process.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Posting method for price variances

If the setting of the **Posting Method Price Variances to Calculation Office** fields in the Production Order Parameters (tisfc0100s000) session is Not Applicable, production results are aggregated to an additional calculation variance. Some details are lost, but the number of transactions is limited.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Posting method for efficiency variances

If the setting of the **Posting Method Efficiency Variances on Calculation Office** fields in the Production Order Parameters (tisfc0100s000) session is Not Applicable, production results are aggregated to an additional calculation variance. Some details are lost, but the number of transactions is limited.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Actual cost price for receipt posting

The setting of the **End Item Receipt Posting** check box in the Production Order Parameters (tisfc0100s000) session and the valuation method can affect system performance and database growth. You can distinguish the following situations:

- **End Item Receipt Posting check box is selected and valuation method is *not* FTP**
If the **End Item Receipt Posting** check box is selected, and the inventory valuation method on item/warehouse level is an *actual* costing valuation method such as FIFO, LIFO, MAUC, lot price or serial price, only a limited number of variance postings takes place because the

end items are received in inventory at their actual production order costs. This means no price variance postings and efficiency postings take place, but additional calculation office variances can occur, especially if the **Financial Transactions by Work Center** check box is selected. The posting methods for variances defined in the Production Order Parameters (tisfc0100s000) session are not used.

- **End Item Receipt Posting check box is selected and valuation method is FTP**
If the **End Item Receipt Posting** check box is selected, and the inventory valuation method on item/warehouse level is *FTP*, variance posting is done by SFC. LN processes inventory variances, which you can view in the Inventory Variances (whina1516m000) session.
- **End Item Receipt Posting check box is cleared and the valuation method is *not* FTP**
If the **End Item Receipt Posting** check box is cleared, and the inventory valuation method on item/warehouse level is an *actual* costing valuation method such as FIFO, LIFO, MAUC, lot price or serial price, variance posting is done by SFC. LN processes inventory variances, which you can view in the Inventory Variances (whina1516m000) session.
- **End Item Receipt Posting check box is cleared and valuation method is FTP**
If the **End Item Receipt Posting** check box is cleared, and the inventory valuation method on item/warehouse level is *FTP*, production variances are likely to occur and are logged according to the settings of the variance parameters in the Production Order Parameters (tisfc0100s000) session. This results in additional postings.

End Item Receipt Posting	Inventory valuation method	Relative impact on database growth
Selected	FIFO, LIFO, MAUC, lot price, serial price	Low
Selected	FTP	Medium
Cleared	FIFO, LIFO, MAUC, lot price, serial price	High
Cleared	FTP	High

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Actual operation rates

The **Process Hours using** field in the Production Order Parameters (tisfc0100s000) session can have the following settings:

- **Actual Man and Machine Rates**
The labor and machine costs are booked using the actual operation rates. If the employee's operation rate differs from the estimated operation rate, price variance postings occur.

- **Estimated Operation Rates**

The labor and machine costs are booked using the estimated values. The used cost components are specified in the Operation Rates (ticpr1150m000) session.

If you select **Estimated Operation Rates**, the number of price variance postings is reduced. However, if in the Operation Rates (ticpr1150m000) session several cost components are specified for the same operation cost type (**Labor**, **Machine**, **Overhead on Machine Hours**, or **Overhead on Man Hours**), additional postings occur.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Printing of documents

To support the production process, you can choose to print several types of documents. Specify the required documents on the **Documents** tab in the Production Order Parameters (tisfc0100s000) session. However, the printing of these documents, slows down system performance; therefore, only print documents that are required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Moment of freezing estimates

To specify the moment that estimates are frozen, use the **Moment Freezing Estimates** field in the Default Production Order Data (tisfc0102m000) session. When the estimates are frozen, every change on the order will result in variance postings, which increases database growth and makes system performance worse. You can select one of the following values, by number group or by production order series:

- Before First WIP Transaction
- During Releasing Order
- During Creating Order

To improve performance, postpone estimate freezing as long as possible. Note that if you select **Before First WIP Transaction**, the estimates are calculated and stored at the first actual posting; this means that performance of the first step will not improve.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

History, archiving, and deleting in Manufacturing

BOM history in Engineering Data Management

To store a history of production BOM lines, select the **PBOM History** check box in the Engineering Data Management Parameters (tiedm0100m000) session. Keeping a history of PBOMs results in additional data.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Delete item costing data

Item costing data is part of the standard cost data, and is stored by price calculation code. If you carry out many price simulations, the data in the underlying tables grows. To remove redundant standard cost data by price calculation code, and to empty the tables, use the Delete Cost Data (ticpr2260m000) session.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Remove item standard costing data

The item standard costing data is part of the standard cost data, and contains all standard costs (FTP) by item, cost component, and warehouse. The data is date effective, and every update of the costs results in new data.

The underlying tables contain the actual standard costs and the standard cost history. Therefore, the underlying tables can grow significantly. Usually, the data is stored for a while, but when the data is no longer required, use the Archive Cost History (ticpr2230m000) session to remove the data.

To remove standard cost data while actualizing standard costs, select the **Delete Standard Cost History Data** check box in the Actualize Standard Cost and Revalue Inventory (ticpr2220m000) session.

Old standard cost data is removed, and takes into account the number of years defined in the **Number of Years to Retain Standard Cost History** field in the Standard Cost Calculation Parameters (ticpr0100m000) session.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Archive and delete in Job Shop Control

In Job Shop Control, you can distinguish between the following data:

- Production orders
- Financial transaction data
- Costing data

If you create production orders, financial transaction data and costing data are automatically created. You cannot have a history of financial transaction data; instead, use the costing data, which is a subset of the financial transaction data.

- **Archive or delete production orders**
To archive or delete closed production orders, use the Archive Production Orders (ticst0250m000) session.
- **Delete financial transaction data of production orders**
To delete the financial data of a reconciled production order, use the Delete Production Order Transactions (ticst3200m000) session.
- **Archive costing history**
To archive and delete costing history data, use the Archive Costing History (ticst2250m000) session.

To remove production orders, use the Cancel Production Orders (tisfc0202m000) session.

Note

For more information, refer to the *User's Guide for Archiving* (U9352).

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Delete in Assembly Control

In Assembly Control no archiving functionality is available; however, you can delete the following data:

- **Assembly orders**
To delete assembly orders and financial data for closed and reconciled orders, use the Purge State-dependent ASC Data (tiasl1200m000) session.
- **Product variants**
To delete product variants, use the Purge Product Variants (tiapl3200m000) session.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Delete and archive in Project Control

With respect to Project Control within Manufacturing, the following is of importance.

- **Delete financial data in Project Control**
If a PCS project is closed, you can use the Delete Financial Transactions by Project (tipcs3200m000) session to remove financial data. After removal of the financial data, you cannot print WIP and costs anymore. The PCS project is definitively closed and cannot be reopened. Note that after the data is deleted, you cannot use the Archive Projects (tipcs2260m000) session anymore to archive the data.
- **Archive projects**
Use the Archive Projects (tipcs2260m000) session to archive or delete closed PCS projects. This includes the financial data, so running this session makes using the Delete Financial Transactions by Project (tipcs3200m000) session superfluous.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Using lots and serials

Generally, the use of lot items and serialized items usually increases the number of records in your database and affects system performance, the more so if you use low volume serialized items or low volume lot items. If low volume lots, low volume serials, or both, are implemented, all warehousing and related financial transactions are performed for individual lots or serial numbers, which results in considerable data growth.

To save system performance and avoid unnecessary data growth, only use these concepts if they are vital to your business processes.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Outbound methods

The outbound method specifies which items will be issued first. You can specify the outbound method in the **Outbound Method** field of the following sessions:

- Item - Warehousing (whwmd4100s000)
- Item - Warehousing Defaults (whwmd4101s000)

The outbound method has the following options:

- LIFO
- FIFO
- By Location

Comparing FIFO and LIFO to the By Location method, using FIFO or LIFO can result in a considerably larger number of records than By Location. This is because for FIFO or LIFO, receipts are stored by

inventory date in the stockpoint inventory. The stock point inventory is displayed in the Stock Point Inventory (whinr1540m000) session.

For example, five receipts on different dates for a particular item in a particular warehouse are registered as five separate entries with different inventory dates in the Stock Point Inventory (whinr1540m000) session. Using By Location, the same receipts would result in a single entry, provided that the items are stored in the same location.

To avoid unnecessary data increase, which can impact system performance, you are recommended to use By Location instead of FIFO or LIFO, unless there is a valid reason to use the latter two. Using the FIFO or LIFO inventory valuation methods has no relation to the outbound methods used. For example, you can use inventory valuation method LIFO or FIFO with outbound method By Location.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Remove order line activities of closed orders

If you do not want to remove warehousing orders with status **Closed**, but want to avoid unnecessary data growth, remove the order line activities defined for the closed warehousing orders. To remove order line activities for closed warehousing orders, in the Remove Warehousing Orders (whinh2250m000) session, select the **Line Activities of Closed Orders** check box.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

SIC and TPOP order horizons

If you use the SIC and TPOP stock replenishment planning methods, do not extend the order horizons further than required for your immediate planning purposes.

In the Inventory Analysis Parameters (whina0100m000) session, TPOP and SIC order horizon data are set in the following fields:

- **Factor**
- **Constant**

In the **Factor** and **Constant** fields of the Generate Orders (TPOP) (whinh2201m000) session and the Generate Order Advice (SIC) (whina3200m000) session, you can overwrite the TPOP and SIC order horizon data set in the Inventory Analysis Parameters (whina0100m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Assign item surcharges for item transfer

To specify if and how items transferred between warehouses must be surcharged, use the **Assign Item Surcharges for Item Transfer** field of the Inventory Handling Parameters (whinh0100m000) session.

Using item surcharges results in additional postings, and therefore data increase, which can affect system performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Calculate surcharges

If the **Calculate Surcharges on Purchase Price of Lot Item** check box of the Lot Control Parameters (whltc0100s000) session is selected, standard cost surcharges are added to the net purchase price of the order line to calculate the lot price.

Selecting this check box is only relevant in case of valuation against lot price. To avoid unnecessary data increase, which can affect system performance, do not select this check box if the standard cost surcharges, which are recorded on item group level, do not apply to lot items.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Engineering revisions in lot control

If the **Engineering Revisions in Lot Control** check box of the Lot Control Parameters (whltc0100s000) session is selected, for a lot, you can record the revision of the item for which inbound or outbound movements are performed. In this way, you can trace revisions from purchase through to sales, and service through production.

Creating revision tracking data results in data increase. To avoid unnecessary data increase, only select this check box if tracking revisions is required.

Performance aspects

- Effect on CPU: No
- Effect on database growth: Yes

Number of staging locations

If the daily number of shipment lines is large compared to the number of available staging locations, locking problems can occur.

By default, one staging location is in use for a warehouse. To avoid locking problems and therefore performance reduction, you must define more staging locations. To do so:

1. In the Warehouse - Locations (whwmd3500m000) session, add multiple locations of type **Staging** to the required warehouses.
2. In the Warehouse - Dock Locations (whwmd2120m000) session, define multiple dock locations for the warehouses.
3. To define the dock locations, select the staging locations defined in the previous step.
4. Assign the dock locations to items, business partners, or both, preferably the business partners for whom the largest volumes of outbound shipment lines are created.

As a result, the dock locations assigned to the items or business partners are used during the outbound process.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

History data

In the Inventory Handling Parameters (whinh0100m000) session, you can enable the creation of history records for the following objects:

- Warehouse orders
- ASN
- Receipts
- Shipments
- Inventory Ownership Change Orders

- Allocation Change Orders
- Adjustment orders
- Cycle counting orders

In the Inventory Reporting Parameters (whinr0500m000) details session, you can specify that history records are created for the following objects:

- Inventory transactions
- Item issue history
- Item issue by warehouse history

Note

In the Inventory Reporting Parameters (whinr0100s000) session, select either the **Item - Issue by Period** field or the **Warehouse - Item - Issue by Period** field. If you select both fields, each issue will be logged twice. This affects system performance and results in data growth.

History data is only used to keep track of the life cycle of an object. Enabling the creation of history data should be carefully considered taking into account the impact of data growth. Note that every change in the order results in an additional history record. If history data is used, you must delete, archive, or delete and archive, the history data on a regular basis.

Note that If you delete an object while history data creation is enabled, LN creates a history record for the deleted object. This history record includes only the last transaction of the deleted object. From the [appropriate](#) menu of the history sessions, you can access the archiving sessions. For further information on deleting and archiving, see *Delete and archive* (p. 89).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Delete and archive

To save disk space and system performance, regularly delete or archive, or delete and archive actual warehousing order data, inventory transaction data, and *history data* (p. 88).

Delete and archive history data

In the following sessions, you can delete or archive, or delete and archive history data:

- Delete/Archive Warehousing Orders (whinh2255m000)
- Delete/Archive Shipment Notice History (whinh3251m000)
- Delete/Archive Receipt History (whinh3260m000)
- Delete/Archive Load/Container/Shipment History (whinh4251m000)
- Delete/Archive Cycle Counting Order History (whinh5250m000)

- Delete/Archive Adjustment Order History (whinh5270m000)
- Delete/Archive Inventory Transactions (whinr1200m000)
- Delete/Archive Inventory Transactions by Item and Warehouse (whinr1210m000)
- Delete/Archive Issues by Period (whinr1220m000)
- Delete/Archive Issues by Period and Warehouse (whinr1230m000)
- Delete/Archive Packaging Item Transactions (whinr1215m000)
- Delete/Archive Handling Unit Version History (whwmd5231m000)

In the following sessions, to keep the last transaction of the objects that you delete, select the **Keep Last Transaction** check box:

- Delete/Archive Warehousing Orders (whinh2255m000)
- Delete/Archive Shipment Notice History (whinh3251m000)
- Delete/Archive Receipt History (whinh3260m000)
- Delete/Archive Load/Container/Shipment History (whinh4251m000)

This way, the most recent transaction stays in the live company while the older data is deleted or archived.

To access the archiving sessions, use the appropriate menu of the history sessions.

Note

For more information, refer to *User's Guide for Archiving* (U9352* US).

Delete live data

In addition to history data, you can also delete live records for the following objects:

- Warehousing orders
- Handling units
- Inbound and outbound advice
- Confirmed shipments
- Adjustment orders and related data
- Cycle counting order and related data

You can access the deletion sessions from the appropriate menu on the sessions of these objects.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Disable unused concepts in Warehousing

To save system performance, you must disable the concepts that you do not use. Clear the following check boxes to disable the concepts that you do not use:

In the Warehouse Master Data Parameters (whwmd0500m000) session:

- **Handling Units in Use**
- **Engineering Revisions on Orders Active**
- The check boxes in the **Test Storage Conditions** group box
- **Lot Control in Use**
- **Serialized Items in Use**

In the Inventory Handling Parameters (whinh0100m000) session:

- **Dynamic Cross-docking**
- **Direct Material Supply (DMS)**
- **Export Compliance Provider**

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Calculate totals at runtime for Warehouse Manager Dashboard

If the **Calculate Totals at Runtime** check box is selected in the User Profiles (whwmd1540m000) session, on the Warehouse Manager Dashboard (whinh2300m000) session, LN calculates the values for the fields of the **Inbound Open**, **Outbound Open**, **Cross-docking**, and **Resource Requirements** group boxes at runtime.

To save system performance, consider clearing this check box.

If the **Calculate Totals at Runtime** check box is cleared, LN calculates these totals:

- If you select an order, provided that the **Show Figures per Order** check box is selected.
- If you click the **Refresh Totals** button. This button becomes available if the current check box, and, on the Warehouse Manager Dashboard (whinh2300m000) session, the **Show Figures per Order** check box is cleared.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Automatic receipts

To create automatic receipt records, LN first creates combinations of buy-from business partners, warehouses, and items based on the ranges or specific selection of business partners, warehouses, dates, and items inserted by the user in the Initiate Automatic Receipts (whinh3223m000) session. Next, LN reads the receipt settings in the terms and conditions for these combinations.

The generated receipt records include data such as the warehouses in which the receipts are to take place, the item quantities, and the dates on which the automatic receipts are to take place. When the automatic receipt date is due, LN performs the automatic receipts.

Creating the combined business partner, warehouse, and item combinations and reading the terms and conditions may draw heavily on your system's resources. Therefore, if receipt records were already created during a previous run of the Initiate Automatic Receipts (whinh3223m000) session, select the **Skip reading of Terms and Conditions** check box to prevent LN from creating the receipt records again before performing the automatic receipts.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Update deliveries

In the course of the delivery process, Warehousing updates a sales order several times.

To carry out these updates directly, in the **Update Sales Deliveries** field of the Inventory Handling Parameters (whinh0100m000) session, select **Direct**.

Select **Decoupled** to split up the process of confirming a shipment line and updating the originating sales order into two separate processes and thus save performance. This is because the table behind the Deliveries (whinh4139m000) session is much smaller than its counterpart of the Shipment Lines (whinh4131m000) session. Consequently, only a small process table with a limited number of records is queried instead of the much larger shipment lines table.

To enhance system performance even further, select **Batch**. This option allows you to carry out these updates in a batch process in the quiet hours, thus reducing the risk of locking problems.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Recalculate freight costs

If value **Automatic** is selected for field **Recalculation of Freight Costs**, and an advanced status is selected for field **Recalculate Load Costs until Status** in the Freight Rates and Costs Parameters (fmfr0100m000) session, freight costs are automatically recalculated for loads, clusters, and shipments each time the loads, clusters, and shipments are manually changed until the loads, clusters, and shipments have reached the status preceding the specified status. Frequent changes to the loads, clusters, and shipments result in numerous freight cost recalculations, which can affect system performance.

To save performance, consider recalculating the freight costs only once, after all changes have been made to the loads and shipments, or only allowing automatic recalculation during the early stages of the planning and shipping process. For this purpose, for field:

- **Recalculation of Freight Costs**, select one of the following values:
 - **Interactive**
 - **No**
- **Recalculate Load Costs until Status**, select an early status.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Update actual load data

If value **Automatic Replanning** is selected for field **Update Actual Load Data** in the Freight Planning Parameters (fmlbd0100m000) session, actual load plans are automatically replanned each time particular changes are made to the freight orders on which the load plan is based. Changes made to the originating orders of freight orders also affect the freight orders. Frequent changes can result in frequent replanning, which can affect system performance.

To save performance, consider replanning the freight orders only once, after all changes have been made. For this purpose, select one of the following values for field **Update Actual Load Data**:

- **Manual Replanning**
- **Not Allowed**

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Trace load plan changes

To keep track of the changes made to load plans and related data, use the **Trace Load Plan Changes** field in the Freight Planning Parameters (fmlbd0100m000) session.

To save system performance, consider selecting value **No** for this field, unless you have a valid reason to track load plan change data.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

History data

To enable the creation of history records for freight orders and freight order clusters, use the Freight Invoicing Parameters (fmfri0100m000) session.

To enable the creation of history records for freight invoices, use the Freight Order Control Parameters (fmfoc0100m000) session.

In the **Log Planning History** field of the Freight Planning Parameters (fmlbd0100m000) session, you can enable the creation of history records for:

- Load plans
- Loads
- Shipments

History data is only used to keep track of the life cycle of an object. Enabling the creation of history data should be carefully considered, taking into account the effect of data growth. Note that every change in the order results in an additional history record. If history data is used, you must regularly delete, archive, or delete and archive the history data.

Note that If you delete an object while history data creation is enabled, LN creates a history record for the deleted object. This history record only includes the last transaction of the deleted object. You can access the archiving sessions from the appropriate menu of the history sessions. For further information on deleting and archiving, see *Delete and archive* (p. 95).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Delete and archive

To save disk space and system performance, regularly delete or archive, or delete and archive actual warehousing order data, inventory transaction data, and *history data* (p. 94).

Delete and archive history data

You can delete and/or archive history data for the following objects:

- Freight orders
- Freight order clusters
- Load plan data
- Shipment data
- Standard route dates and times

You can access the archiving sessions from the appropriate menu of the history sessions.

For more information, refer to the *User Guide for Archiving* (/guides/U9352HUS) (U9352* US).

Delete live data

In addition to history data, you can also delete live records for the following objects:

- Freight orders
- Freight order clusters
- Load plans
- Load plan tracking data
- Planning log data

To access the deletion sessions, use the appropriate menu on the sessions of these objects.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Disable unused concepts in Freight Management

To save system performance, disable the concepts you do not use. If invoice matching and approval is not applicable for a particular carrier, clear the **Carrier/LSP Invoice** check box in the Carriers/LSP by Shipping Office and Planning Group (fmfr0160m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Order signals and blocks

In various parameters sessions, and based on the business partner's credit history, you can set up signals/warnings or block the user at different stages of orders; the parameters are as follows:

- **Signal if Credit Limit is Exceeded**
- **If Credit Review is Overdue**
- **If Invoice is Overdue**
- **If Business Partner is Doubtful**

These parameters are set in the following sessions:

- Call Parameters (tsclm0100m000)
- Service Order Parameters (tssoc0100m000)
- Maintenance Sales Control Parameters (tsmsc0100m000)

Enabling these parameters will decrease performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Service order checks

When releasing a range of service orders in the Release Service Orders (tssoc2200m000) session, LN can perform the following checks:

- **Check Skill**
- **Check Project Status**
- **Check Inventory Availability**
- **Check Capacity Availability**
- **Check Service Kit Allocation**

Enabling these parameters will decrease performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Work order parameters

Some of the **Procedure Settings** in the Work Order Parameters (tswcs0100m000) session help users manage the work order flow smoothly; the settings are as follows:

- **Reference Activity Mandatory**
- **Planned Times Mandatory**
- **Check on Time Limits**

Enabling these parameters will have a limited impact on performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Search paths

In the Call Parameters (tsclm0100m000) and Service Order Parameters (tssoc0100m000) sessions, you can set the following search paths:

- **Path for Labor Rate**
- **Search Path for Actual Cost Rate**
- **Search Path for Actual Sales Rate**
- **Search Path for Estimated Cost Rate**
- **Search Path for Estimated Sales Rate**

Adding extra levels to a search path, such as to find an appropriate labor rate when processing hours spent by technicians, will decrease performance.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Transaction log

Based on the **Delete Transaction Log After Accepting Call** setting in the Call Parameters (tsclm0100m000) session, logging of service call-related transactions can be deleted when a service call attains status **Accepted**; this will reduce database growth.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

History logging

In Service, you can use history for later analysis, such as in the Calculate Uptime Analysis (tsmdm3400m200) session or the Calculate Service Performance Indicators (tsmdm3400m100) session. If history is logged, it should be regularly archived and deleted. However, by default, history should *not* be logged; logging should only be enabled when required by your company's model.

History logging parameters can be set in the following sessions:

- Contract Management Parameters (tsctm0100m000)
- Service Order Parameters (tssoc0100m000)
- Maintenance Sales Control Parameters (tsmsc0100m000)
- Work Order Parameters (tswcs0100m000)

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Logging Setup

To maintain all fields of various entities for which logging should be active when the value of a specific field changes, use the Log Definition (tsmdm1190m000) session. Because logging decreases performance, choose the fields carefully.

The following is the list of entities for which logging should be active:

- Service Orders (tssoc2100m000)
- Service Order Activities (tssoc2110m000)
- Service Order Material Costs (tssoc2122m000)
- Service Order Labor Costs (tssoc2132m000)

- Service Order Other Costs (tssoc2142m000)
- Service Order Fixed Prices (tssoc2115m000)
- Serialized Items (tscfg2100m000)
- Customer Claims (tscmm1100m000)
- Customer Claim Lines (tscmm1110m000)
- Customer Claim Estimates (tscmm1111m000)
- Customer Claim Deliveries (tscmm1112m000)
- Customer Claim Receipts (tscmm1113m000)
- Supplier Claim Requests (tscmm1114m000)
- Customer Claim Invoice Lines (tscmm1115m000)
- Supplier Claims (tscmm2100m000)
- Supplier Claim Lines (tscmm2110m000)
- Supplier Claim Estimates (tscmm2111m000)
- Supplier Claim Deliveries (tscmm2112m000)
- Supplier Claim Receipts (tscmm2113m000)
- Supplier Claim Invoice Lines (tscmm2115m000)
- Service Engineer Assignments (tssoc2505m000)
- Service Order Fixed Prices (tssoc2115m000)

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Archive and delete order data

In Service, during the closing process of service orders, the service orders can be written to history or deleted; this applies to most other Service objects, such as service contracts and service quotations.

Example

The Close Service Orders (tssoc2201m000) session includes the following options:

- **Delete Service Orders**
- **Copy Service Orders to History**

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Unused concepts in Service

If you do not use a concept in Service, to improve performance, disable the concept.

If you clear the following check boxes, the relevant concept is not used:

- **Margin Control** in the following:
 - Contract Management Parameters (tsctm0100m000), **Contract Gross Margin Control**.
 - Service Order Parameters (tssoc0100m000), **Use Margin Control**.
 - Maintenance Sales Control Parameters (tsmsc0100m000), **Use Margin Control**.
- **Check Material Availability** in the following:
 - Service Order Parameters (tssoc0100m000)
 - Maintenance Sales Control Parameters (tsmsc0100m000)
 - Work Order Parameters (tswcs0100m000)
- **Serialized Item Group Usage** in Configuration Management Parameters (tscfg0100m000).
- **Traveling Cost Method** in General Service Parameters (tsmdm0100m000), set to **None**.
- **Functional Elements Active** in General Service Parameters (tsmdm0100m000).
- **Engineering Revisions Active** in General Service Parameters (tsmdm0100m000).
- **Discounts from Price Books** in General Service Parameters (tsmdm0100m000).

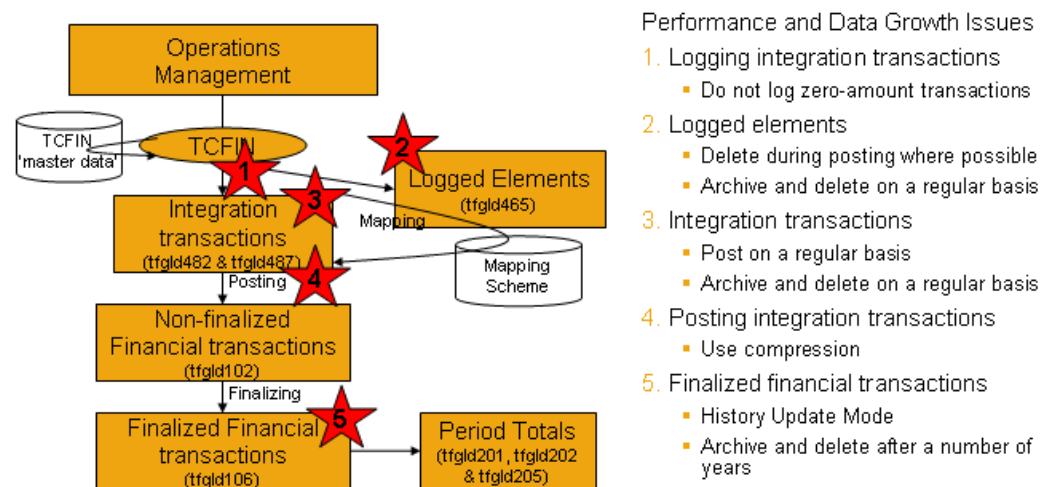
Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Integration transactions

General integrations and transactions flow

The figure below shows the high level integrations and transactions flow from Operations Management to Financials.



The numbers indicate the main areas where performance and data growth problems can occur. These areas are the following:

1. *Logging integration transactions (p. 104)*
2. *Logged elements (p. 104)*
3. *Integration transactions (p. 104)*
4. *Posting integration transactions (p. 105)*
5. *Finalized financial transactions (p. 105)*

Logging integration transactions

At several places in Financials, zero-amount transactions can occur, such as a tax booking for export with a percentage of 0. The user can indicate per integration document type whether a transaction must be logged.

In the Integration Document Type by Transaction Origin (tcfm0110m000) session, the **Log Zero Amounts** check box allows users to indicate whether zero-amount transactions must be logged. Clearing this check box will improve performance and reduce data growth.

Note

This setting also applies to reconciliation bookings.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Logged elements

In LN, you can keep logged elements after posting the integration transactions to the general ledger. These mapping elements can be used for analysis and to fix any incorrect postings due to errors in the mapping scheme setup. This means the user defined an incorrect ledger account for a specific posting, which is only detected after posting to the general ledger. However, the number of logged elements will grow considerably with every integration transaction.

To deal with this data growth, you have two options:

- **Delete logged elements during posting**
In the Integration Parameters (tfgld4150s000) session, ensure the **Delete Logged Elements during Posting** check box is selected.
- **Archive and delete logged elements**
To keep the logged elements, you must archive them with the integration transactions on a daily or weekly basis, using the Archive / Delete Integration Elements and Integration Transactions (tfgld4283m000) session. You can also only archive or delete the logged elements and keep the integration transactions.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Integration transactions

Integration transactions can be split in two:

- Integration transactions details

- Temporary details, such as status information

Post integration transactions to general ledger on a regular basis

Performance of the integration process will decrease when the table containing the temporary details contains too much data. This data will be deleted during the posting process. Therefore, the integration transactions must be posted to the general ledger on a regular basis using the Post Integration Transactions (tfgld4282m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Archive and delete integration elements and transactions

Timely archiving of integration elements and transactions to an archive company using the Archive / Delete Integration Elements and Integration Transactions (tfgld4283m000) session is recommended. Depending on the data sizes of the specific tables, integration elements must be removed from the production environment as soon as possible. Whether integration elements should also be archived depends on the users' requirements.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Posting integration transactions

Compressing techniques can be used to reduce integration transactions with similar properties to one general ledger transaction.

To compress transactions, in the Mapping Scheme (tfgld4573m000) session, on the **Document Numbering / Compression** tab, ensure the **Compression of Debit Transactions** and **Compression of Credit Transactions** check boxes are selected.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Finalized financial transactions

Generally, finalized financial transaction data must remain in the live environment for several years. After this time, finalized financial transaction data can be archived and deleted using the Archive / Delete Financial Transactions (tfgld6205m000) session.

To specify a retention period, in the Group Company Parameters (tfgld0501m000) session, set the **Store Data for X Years** parameter to the required number of years.

Performance aspects

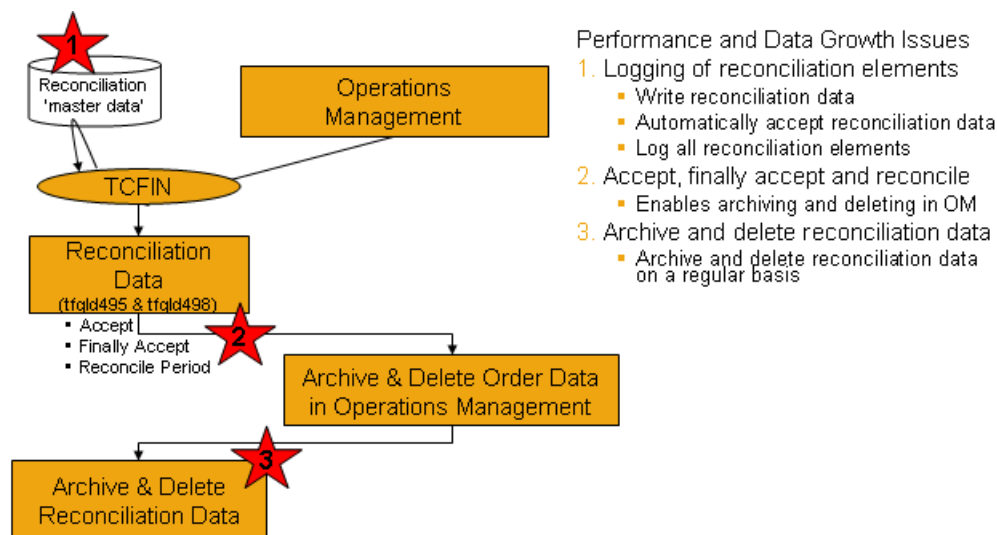
- Effect on CPU: Yes
- Effect on database growth: Yes

Reconciliation

Main reconciliation flow

Because of the newly introduced reconciliation tool in LN, integration transactions can be removed soon after posting to the general ledger.

The figure below shows the main reconciliation flow.



The numbers indicate the main areas where performance and data growth problems can occur. These areas are the following:

1. *Logging of reconciliation elements (p. 107).*
2. *Accept, final accept, and reconcile (p. 108).*
3. *Archive and delete reconciliation data (p. 108).*

Logging of reconciliation elements

Regarding performance and data growth, consider the following parameters in the Reconciliation Groups (tcfm0120m000) session:

- **Write Reconciliation Data**

Writing of reconciliation data results in significant data growth and loss in performance. Therefore, you should only select the **Write Reconciliation Data** check box for reconciliation groups that require detailed analysis. For interim accounts, it is recommended to switch on logging reconciliation data, but for end accounts this is generally not required.

Note By default, the check box is selected for most of the end accounts.

When no further analysis is required, you can clear the **Write Reconciliation Data** check box because all integrations and mappings are correct. Then, reconciliation data for this reconciliation group can be archived and deleted using the Archive / Delete Reconciliation Data (tfgld4295m200) session.

- **Log All Reconciliation Elements**

For each reconciliation group, you can specify the reconciliation elements for which reconciliation data must be logged. However, at the time of going live, not all reconciliation groups may yet have a well-defined set of reconciliation elements. Additionally, at some point in time, it could be required for a proper reconciliation to add a new reconciliation element. To do so, the **Log All Reconciliation Elements** check box must be selected for all reconciliation groups that do not have a well-defined set of reconciliation elements at the time of going live. If this check box is selected, *all* reconciliation elements will be logged, resulting in huge data growth and severe loss in performance. Therefore, only use this setting as a temporary solution.

In a stable environment, the **Log All Reconciliation Elements** check box at reconciliation group level should always remain cleared. If this check box is selected for a specific reconciliation group, it should be cleared as soon as possible, generally no later than a few weeks after going live. When you clear this check box, to remove the logged reconciliation elements, run the Delete Logged Reconciliation Elements (tfgld4296m000) session. When all reconciliation groups have their **Log All Reconciliation Elements** check box cleared, table tfgld498 can be purged at database level.

- **Automatically Finally Accept Reconciliation Data**

If this check box is selected, the status of reconciliation transactions is automatically set to **Finally Accepted** at the time of logging. You can use this setting for reconciliation groups that require analysis, but do not require a detailed acceptance procedure. Selecting this check box will bypass time-consuming acceptance and final acceptance reconciliation steps.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Accept, final accept, and reconcile

Reconciliation, that is, acceptance, final acceptance and archiving, must take place on a regular basis for the reconciliation groups marked for reconciliation in the Reconciliation Groups (tcfm0120m000) session. After approved reconciliation, it is recommended to archive the reconciled data.

Note

Final acceptance of reconciliation data will enable archiving of related business objects (orders) in Operations Management.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Archive and delete reconciliation data

When all reconciliation data in a specific period has attained status **Finally Accepted**, the analyzed reconciliation transactions must be archived using the Archive / Delete Reconciliation Data (tfgld4295m200) session. To prevent unacceptable data growth, this must be done on a regular basis.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Transaction types

History update mode

In the Transaction Types (tfgld0511m000) session, the **History Update Mode** field can be set to one of the following:

- **Real Time Processing**
LN frequently updates the tfgld2 xx tables during transactions entry.
- **Batch Processing**
LN only updates the tfgld2 xx tables during finalization.

From a performance perspective, **Batch Processing** is the preferred setting, especially if batches are system created, such as integrations, central invoicing, fixed assets management, and so on.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Accounts Receivable

Open entries - Accounts Receivable

The accounts receivable open entries store all accounts receivable transactions. When they have been fully paid, accounts receivable remain in the open entries for information purposes and analysis. However, retaining fully paid accounts receivable longer than required affects the performance of various processes in Accounts Receivable and Cash Management.

The performance of the following sessions is affected by the volume of open entries:

- Business Partner - Credit Notes (tfacr2120m000)
- Assign Credit Notes to Invoices (tfacr2121m000)
- Assign Advance/Unallocated Receipts to Invoices (tfcmg2130s000)
- Assign Unallocated/Advance Receipts to Invoices (tfcmg2105s000)
- Print Control Account Checklist (tfacr2415m000)

To optimize the performance of accounts receivable sessions and reduce database growth, complete the following steps:

1. *Write off payment differences (p. 109).*
2. *Archive and delete fully paid sales invoices (p. 110).*
3. *Remove monthly billing invoices (p. 110).*

Write off payment differences

Often, accounts receivable contain balances that are not expected to be paid, such as because of rounding differences. To avoid retaining these accounts payable as “open”, it is recommended to periodically run the Write Off Payment Differences (tfacr2240m000) session with specific tolerance limits as appropriate to the business. A periodic cleaning up of accounts payable, to represent only the actual receivables, will optimize the performance of various sessions and make the archiving process more efficient in removing these accounts receivable.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Archive and delete fully paid sales invoices

To improve the performance of most of the accounts receivable processes, run the Archive / Delete Fully Paid Sales Invoices (tfacr2260m000) session.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Remove monthly billing invoices

If the monthly billing functionality is used, to regularly archive and delete the tables, run the Remove Monthly Billing Invoices (tfacr2261m000) session.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Accounts Payable

Open entries - Accounts Payable

The accounts payable open entries store all accounts payable transactions. When they have been fully paid, accounts payable remain in the open entries for information purposes and analysis. However, retaining fully paid accounts payable longer than required, affects the performance of various processes in Accounts Payable and Cash Management.

The performance of the following sessions is affected by the volume of open entries:

- Assign Credit Notes to Invoices (tfacp2120m000)
- Assign Invoices/Schedules to Credit Notes (tfacp2121s000)
- Assign Advance/Unallocated Payments to Invoices (tfcmg2131s000)
- Assign Unallocated/Advance Payments to Invoices (tfcmg2106s000)
- Print Control Account Checklist (tfacp2415m000)

To optimize performance of accounts payable sessions and reduce database growth, complete the following steps:

1. *Write off payment differences (p. 111).*
2. *Archive and delete fully paid purchase invoices (p. 111).*

Write off payment differences

Often, accounts payable contain balances that are not expected to be paid, such as because of rounding differences. To avoid retaining these accounts payable as “open”, it is recommended to periodically run the Write Off Payment Differences (tfacp2230m000) session with specific tolerance limits as appropriate to the business. A periodic cleaning up of accounts payable, to represent only the actual receivables, will optimize the performance of various sessions and make the archiving process more efficient in removing these accounts payable.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Archive and delete fully paid purchase invoices

To improve the performance of most of the accounts payable processes, run the Archive / Delete Fully Paid Purchase Invoices (tfacp2250m000) session.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Cash Management

Cash Management

Various sessions in Cash Management, such as Select Invoices for Payment (tfcmg1220m000) and Select Invoices for Direct Debit (tfcmg4220m000), use the Open Entry tables from the Accounts Payable

and Accounts Receivable modules. Therefore, archiving and deleting the open entries in Accounts Payable and Accounts Receivable, helps improve the performance of Cash Management processes.

To optimize performance of Cash Management sessions and reduce database growth, complete the following steps:

1. *Match electronic bank statements (p. 112).*
2. *Unused concepts in Cash Management (p. 112).*
3. *Remove posted payment batches, direct debits, and settled trade notes (p. 113).*

Match electronic bank statements

Matching electronic bank statements uses a series of steps to match Open Entry documents with the bank files. To have a better hit rate that ensures quicker matching, it is recommended that the user maintains conversion data for bank relations at a more detailed level. This is done in the Conversion Data for Electronic Bank Statements (tfcmg5105m000) session.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Unused concepts in Cash Management

If you do not use a concept in Cash Management, to improve performance, disable the concept.

Consider the following concepts:

- **Cash Flow**
If cash flow reporting is not required, in the Group Company Parameters (tfgl0101s000) session, on the **Concepts** tab, ensure the **Cash Flow Statement** check box is cleared. Cash flow stores data about how cash flows in different transactions in various tables. Disabling this concept will prevent storage of redundant data, and improve performance of the cash management process.
- **Trade Notes**
If the payment/receipt process does not follow the trade notes procedure, in the CMG Parameters (tfcmg0500m000) session, ensure the **Trade Notes** check box is cleared. This will prevent unrequired checks from being performed in the cash management process. It will also improve performance of the anticipated payments/receipt, and reconciliation processes.
- **Schedules Mandatory**
If the payments/receipt process in your organization is not in terms of schedules, in the Company Parameters (tfgl0503m000) session, on the **Concepts** tab, ensure the **Schedules Mandatory** check box is cleared. This will prevent creation of mandatory schedules in the Receipt Schedules/Payment Schedules table. It will also prevent performance problems when making receipts or payments.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Remove posted payment batches, direct debits, and settled trade notes

The Automatic Payment and Direct Debit processes are mainly performed using the following sessions:

- Batch Numbers for Payment Procedure (tfcmg1521m000)
- Batch Numbers for Direct Debit Procedure (tfcmg4521m000)

These display sessions provide options to invoke multiple cash management related processes. You can improve performance of these sessions if posted payment batches and direct debit batches are regularly archived and deleted. To do so, use the Remove Posted Payment Batches (tfcmg1259m000) and Remove Posted Direct Debit Batches (tfcmg4259m000) sessions.

Trade Note processes are performed using the following sessions

- Selected Trade Notes Receivable for Processing (tfcmg4526m000)
- Selected Trade Notes Payable for Processing (tfcmg1526m000)

To improve performance of these sessions, remove settled trade notes using the Remove Settled Trade Notes Payable (tfcmg1225m001) and Remove Settled Trade Notes Receivable (tfcmg4225m001) sessions.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Fixed Assets

Fixed Assets

To improve performance of some Fixed Assets sessions, do the following:

- Archive fixed asset and related transaction data using the Period End (tffam8205m000) and Archive/Delete Disposed Assets (tffam8208m000) sessions.
- Archive data regularly. This will help prevent performance problems in all "Mass" processes, such as Mass Depreciation, Mass Transfer, and Mass Disposal.

- Archive reports, such as Invested Capital Overview and the Depreciation Expense Projection. Therefore, these will show performance improvement.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Print options in reports

Most reports in Fixed Assets provide options to print comments, associated notes, and business information with the asset details. Unless these details are required, it is recommended not to use these options. This also applies to the **Zero Value Assets** option provided in some reports.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Controlling

Controlling

When using the Import Actual Performance (tfcat2220m000) session, ensure the **Insert Zero Values** check box is cleared, unless required. Otherwise, even if there are no performance values for specific reference units, records with zero values will be created.

Archiving and deleting of transactional data in Financials

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

New batch per user

To avoid locking issues due to multiple users working on the same batch and transaction type, it is recommended to create a new batch per user. To do so, in the Invoicing Parameters (cisli0100m000) session, on the **Options** tab, select the **Create New Batch by User** option.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Invoicing batch templates and options

When manually processing an invoicing batch, it is recommended to use an invoicing batch as specific as possible to the needs. For example, if only one or a few sales orders will be invoiced, it is preferable to use invoicing batches in which only sales orders are enabled. This improves performance because the selection is restricted to a subset of orders. To create a fitting invoicing batch template, use the Invoicing Batch Templates (cisli1125m000) session.

When configuring invoicing options in the Invoicing Options (cisli1120s000) session, on the **Print Options** tab, ensure you clear check boxes for print layouts that are not required.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Composing invoices

With LN you can compose multiple invoice lines to one invoice depending on a number of fixed and variable criteria. Composing of invoice lines helps reduce data growth because fewer invoices will be created.

For example, to compose invoices with the same tax code or department, ensure you select the corresponding **Combine** check box in the Invoicing Methods (tcmcs0555m000) session.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Unused concepts in Invoicing

If you do not use a concept in Invoicing, to improve performance, disable the concept.

Concept	Session	Parameter
Monthly billing invoices	Group Company Parameters (tfgld0101s000) ACR Parameters (tfacr0100s000)	Monthly Billing Invoices Generate MBI at Group Company Number Group Default Series
Invoices and receipts by shipment	CMG Parameters (tfcmg0100s000)	Receipts Against Shipments
Log Intrastat for manual sales	Invoicing Parameters (cisl0100m000)	Log Intrastat for Manual Sales

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Job process

With LN you can place the Compose/Print/Post Invoices (cisl2200m000) session in a job process. To avoid locking issues, this should be done when no other users are manually running the same session.

Because the job process also updates invoice-to business partner balances, it is recommended to sequence job processes in such a way that no other process which also updates business partner balances, such as global approval of sales orders, is running in parallel.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Archive and delete sales invoice data

In Invoicing, with the Archive and Delete Invoice Data (cisl3210m000) session you can archive and delete sales invoice data to an archive company after the invoice has been created. To preserve system performance and prevent data growth, it is recommended to run this session periodically.

Note

- To archive sales invoice data, ensure the **Copy to Archive Company** check box in the Invoicing Parameters (cisl0100m000) session is selected.
- For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Batch processing

In the People Parameters (bpm dm0100m000) session, the **Process Labor Costs/Expenses** setting allows you to specify how transactions must be processed.

Generally, from a performance perspective, it is recommended to set this parameter to **In Batches** if possible.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Archive and delete transaction data

For efficient data entry, it is important to delete processed hours and expenses regularly. To do so, use the Delete Hours and Expenses (bptmm1206m000) session.

Note

For more information, refer to the *User's Guide for Archiving* (U9352* US).

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Yes

Unused concepts in People

If you do not use employee budgets, in the People Parameters (bpmdm0100m000) session, ensure the following check boxes are cleared:

- **Update Employee Budget with Team Budget**
- **Update Employee Budget with Actual Hours**

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Model tax exceptions

When the derived tax code is incorrect, you can define tax code exceptions. A tax code exception is a set of transaction details for which you define a tax code or tax country and business partner tax country other than the values that result from the standard tax code derivation.

You can define the tax exceptions in the following sessions:

- Tax Exceptions by Country (tctax1100m000), for individual countries.
- Tax Exceptions by Country Set (tctax1101m000), for a country set.

However, if you set up tax exceptions, try to limit the number of exception rules. More rules means more complexity, which affects performance. Therefore, only model exceptions for tax situations that are often applicable and for which the standard tax logic is not sufficient. For tax situations that do not occur often, you can also manually enter the tax details by order. If possible, to limit the number of exception rules, use country sets.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Update direct delivery sales order tax

In the **Update Direct Delivery Sales Order Tax** field of the Tax Parameters (tctax0100m000) session, you can select the method used to update the tax data of a direct delivery sales order based on the tax data of the corresponding purchase order.

If you set this field to **Always**, each purchase order change triggers the tax defaulting on the linked sales order, which decreases performance.

Therefore, to take performance into account, use the following values for this field:

- **Never**
If updates are not required, such as if direct deliveries always take place in one country, or if direct deliveries rarely occur, select **Never**.
- **Only for ABC Transactions**
If direct deliveries always take place between EU countries, select **Only for ABC Transactions**.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Use tax provider

With the **Use Tax Provider** check box in the Tax Provider Parameters (tctax6100m000) session, you can determine whether you want to enable tax calculations performed by a tax provider.

If you use a tax provider, the tax amounts are stored in the tax register of the tax provider. To display the amounts also in LN, they must also be calculated in LN, which decreases performance. To limit performance problems, you can also set up tax calculation rules in LN by using destination sales tax exception modeling, or tax exception modeling.

However, this is only a good alternative if the following is applicable:

- The required knowledge on tax rules and jurisdictions is available.
- The number of rules and jurisdictions is limited.

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Unused concepts in Tax Handling

If you do not use a concept in Tax Handling, to improve performance, disable the concept.

If you do not add the following concepts to the **Search Sequence Tax Libraries** group box in the Tax Parameters (tctax0100m000) session, the relevant concept is not used:

- **Exemptions by Country**
- **Exemptions by Country Set**
- **Exceptions by Country**
- **Exceptions by Country Set**

- **Destination Sales Tax**

Performance aspects

- Effect on CPU: Yes
- Effect on database growth: Not applicable

Delete and archive tax data

To save disk space and system performance, delete or archive tax declaration data on a regular basis.

Note

For more information, refer to the *User's Guide for Archiving (U9352 US)*.

Performance aspects

- Effect on CPU: Not applicable
- Effect on database growth: Yes

Evaluate tax parameters for performance

To start the Evaluate Tax Parameters for Performance (tctax0200m000) session, from the appropriate menu of the Tax Parameters (tctax0100m000) session, select **Evaluate Tax Parameters for Performance**.

The Evaluate Tax Parameters for Performance (tctax0200m000) session checks whether data is present for a particular parameter in the Tax Parameters (tctax0100m000) session. For example, if the **Exceptions by Country** concept is entered in the **Search Sequence Tax Libraries** group box of the Tax Parameters (tctax0100m000) session, tax exception records must be available in the Tax Exceptions by Country (tctax1100m000) session. If not, you are advised to remove the concept from the Tax Parameters (tctax0100m000) session because it decreases performance at the moment of tax defaulting.

Note

The Evaluate Tax Parameters for Performance (tctax0200m000) session does not check the quality of the tax setup. For example, if only one tax exemption for a very exceptional case is specified, this session does not advise you to delete the record and deal with this exceptional case manually by order; you must evaluate the quality yourself.

Performance aspects

- Effect on CPU: Yes

- Effect on database growth: Not applicable

Table sharing

Generally, the functional requirements determine which tables must be shared. For table sharing, performance-related considerations are less relevant.

Table sharing can result in larger tables. Larger tables can occur especially if records from a particular table are not used in all companies, or if you share dynamic data. Larger tables can decrease performance. Furthermore, table sharing can lead to more locking problems, because more users update the same data.

However, in practice these problems do not regularly occur. If problems occur it will probably concern dynamic data, such as in the Financials package related to integration transactions or central purchase invoice matching.

If these performance problems occur, the best solution is to regularly archive and delete data from these tables; generally, this should work. If this is not a sufficient solution, use one of the following methods:

- Replication.
- Keep the tables in sync manually.
- Disable the required functionality.

Note

For more information, refer to the following documents:

- *User's Guide for Archiving* (U9352* US).
- *User's Guide for Multicompany Table Sharing* (U9505* US).

Changing the multicompany setup

Generally, changing the multicompany setup does not affect the performance. However, if the change in the multicompany setup also results in a change in the technical infrastructure, you must reconsider the sizing and tuning.

If you migrate from a multicompany setup implemented on multiple application servers to a single company setup, the technical infrastructure, including the sizing and tuning, requires special attention. If you migrate, such as from Baan IVc to LN, this might apply to you.

To set up LN

Before designing your LN infrastructure, you must have insight into the functional requirements for the environment. The Sizing White paper provides information to help you answer the following questions:

- What is the availability window.
- What is the batch window.
- What are disaster recovery requirements.
- Which integrations.

Refer to solution number **225096**. This solution provides performance related topics which deserve special attention or are not yet published via the regular documentation. Also information about the latest version of the Sizing White paper can be found here. Download the solution number at <http://www.infor.com/inforxtreme>.

Tuning the operating system for LN

Check the OS kernel to be prepared for an LN installation. If necessary, changes must be made to avoid problems during the installation and later at production if multiple users try to enter the system.

For more specific information about the different values that must be entered, refer to the *Infor10 ERP Enterprise (LN) - Performance, Tracing and Tuning Guide (U9357 US)*.

Tracing and tuning LN

The *Infor10 ERP Enterprise (LN) - Performance, Tracing and Tuning Guide (U9357 US)* provides information on various topics related to measuring and improving the performance of LN, such as the following:

- Shared tracing tools.

- Database driver parameters.
- Shared memory management.
- Locking parameters.

Based on new insights, the defaults for locking are changed with porting set 8.4b; however, these settings are also recommended for earlier installs. You are advised to check the **lock_retry** parameters in the Performance Tracing and Tuning Guide.

Refer to solution number **225096**. This solution provides performance related topics which deserve special attention or are not yet published via the regular documentation. This solution number also provides information about the latest version of the Performance Tracing and Tuning Guide. The solution number can be downloaded at <http://www.infor.com/inforxtreme>.

Minimizing data storage

LN can require quite some data storage depending on the application configuration.

- **Oracle**
It is possible to compress data within Oracle for LN. For more specific information, check solution number **225096**. This solution provides performance related topics which deserve special attention or are not yet published via the regular documentation. Also a solution number about compressing data within Oracle is provided here. Download the solution at <http://www.infor.com/inforxtreme>.
- **MS SQL Server**
For SQL Server, the porting sets 8.4b and later will, by default, use the SQL Server **varchar** type for storing string information. This can cause quite a decrease on data storage usages. For sites that have an existing Baan 5.0 or LN 6.1 installation that want to move to 8.4b or later, it is highly recommended to check the technical notes of the porting set. The technical notes provide information about how to change existing tables to use **varchar** instead of **char** type.

Customizations

The *Infor10 ERP Enterprise (LN) - Performance, Tracing and Tuning Guide (U9357 US)* provides various tips on how to trace your customizations to identify potential performance bottlenecks. For an explanation about Call Graph Profiler, refer to Chapter 3 of this guide.

Refer to solution number **225096** to download the latest version of the Performance Tracing and Tuning Guide. The solution number can be downloaded at <http://www.infor.com/inforxtreme>.

Sizing Process

Hardware

During the implementation of LN ensure you select suitable hardware to avoid problems at a later stage of the project. Undersized hardware that cannot be upgraded, or oversized hardware can stop the implementation due to budget problems. Therefore, you must consider sizing carefully during the implementation.

Final sizing

A final sizing can only be performed if all implementation aspects are known. In a pre-sales situation, there is often only high level information about the usage of the application. In this case, a pre-sales sizing can be done to have an estimate on hardware costs.

Sizing verification

A sizing verification can be done after going live with the first implementation. With the sizing verification, all assumptions made during the sizing can be verified. If required, the sizing can be adjusted to better support the following implementations.

Stress test

Performance problems tend to appear shortly before going live with an implementation. It is advised that you perform a stress test shortly before going live, to verify if the actual performance meets the requirements.

This table shows the sizing stages and the tools, and the documents or services supporting them.

Step	Phase	Tooling/ documentation/ ser- vice	Notes
------	-------	-----------------------------------	-------

1	Collect key sizing figures from customer.	Configuration and planning questionnaire. Configuration and planning questionnaire for upgrades.	For upgrades use information from existing applications.
2	Optional: customer specific benchmark to determine load of specific functionality.	Customer specific benchmark.	Only for large/complex/business critical customers.
3	Size the hardware.	Sizing Guide / E-Sizing assistant (web based).	
4	Deliver sizing and deployment information to the customer.	Sizing Template (End 2007) Sizing White Paper (End 2007).	
5	Optional: stress test.	X	Timely before going live to be able to solve problems.
6	Optional: a sizing verification at the customer site to adjust sizing figures.	Sizing verification.	Only for large/complex/business critical customers After going live.

Steps 1, 3 and 4 are an iterative process. In a pre-sales phase, an initial sizing can be done to determine hardware costs. In an after-sales phase an more detailed sizing can be developed.

Step 6 can be done at multiple implementation stages, such as after going live for each customer location.

Refer to solution number **225096** to find the latest information about performance related topics which deserve special attention or are not yet published via the regular documentation. It also provides information about the latest version of the Sizing White Paper. Download the solution number at <http://www.infor.com/inforxtreme>.

Sizing guides, questionnaires, and e-sizing assistance can be found at: <http://pbc.infor.com/sizing/>

For second line sizing support contact infor.sizing@infor.com

Infrastructure

Choosing the correct infrastructure is very important for a good performing LN environment which meets the expectations of the customer.

There is a trend to consolidate all operations in a single location in a single LN environment. This results in large implementations with many concurrent users and large volume databases. In a consolidated environment, batches need to process much more data and will therefore take longer.

Customer expectations and performance requirements must be carefully examined and matched with the proposed infrastructure. For more information on infrastructure, refer to the Sizing Guide and the Sizing White Paper.

Check solution number **225096**. This solution provides performance related topics which deserve special attention or are not yet published via the regular documentation. It also provides information about the latest version of the Sizing White Paper. Download the solution number at <http://www.infor.com/inforxtreme>.

OnePoint Diagnostics

Infor offers the LN diagnostic scan as part of OnePoint Diagnostics. The LN diagnostic scan is an excellent tool to find performance problems in the LN environment

The tool can be used at different implementation stages and is well suited to make a snapshot of the environment for later comparison.

The tool is available as a solution (**211788**) which can be downloaded at <http://www.infor.com/inforxtreme>.

LN Diagnostic Scan

It is recommended to let your system be analyzed periodically for the best performance indication.

The LN Diagnostic Scan reviews your complete configuration and searches for enhancements based on the experiences of hundreds of other projects.

The results of the LN Diagnostic Scan supplies a complete overview of the status of the system from a deep technical perspective up to the general application issues. Each implementation is assessed on its implementation quality using the experience of over 200 customer investigations.

- **Key features**
 - Covers the complete system areas: Hardware, operating system, database, networking and application part.
- Passive tool, which makes no changes to the system.
- Available for each hardware, database, and LN version.
- Easy to use/easy to run-procedure.
- No impact to productive systems and easy to implement during any part of the day.
- Results available within 3 working days.

The LN Diagnostic Scan saves costs

The LN Diagnostic Scan speeds up the testing and tuning part of the implementation process with at least 30 percent. Also, there is no need to hire an individual specialist from the beginning.

A clear and detailed action plan will be provided with the necessary background information. These different benefits can mean a significant reduction in costs.

Business opportunities

Use the LN Diagnostic Scan before the system goes live. Get a detailed blueprint of all relevant information and get your system checked periodically. The output of the LN Diagnostic Scan is processed by the ExpertSystem. This is the only way to keep your system in an optimal condition without spending hours implementing all types of modifications for the individual components.

When do you need the ERP LN Diagnostic Scan?

The LN Diagnostic Scan can be used to emphasize the quality aspects of the different milestones of each LN project:

1. Audit of the first delivery of hardware, database, and application configuration.
2. Audit of the release of the complete application environment and customizations.
3. Just before going live to ensure 100 percent completeness.
4. Periodically to analyze trends and exceptions in different components.

During its life cycle, the LN Diagnostic Scan will support, in a consistent way, by reporting all its findings to maximize the performance of the system.

Appendix A

Glossary

A

additional costs

The cost items that can be placed on an order or shipment to charge extra costs for an order or shipment.

appropriate menu

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

ATP

See: *available-to-promise* (p. 133)

ATP

See: *available-to-promise* (p. 133)

available-to-promise

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

In LN, available-to-promise (ATP) is part of a larger extended framework of order promising techniques called capable-to-promise (CTP). If an item's ATP is insufficient, CTP goes beyond ATP in that it also considers the possibility of producing more than was initially planned.

In addition to the standard ATP functionality, LN also uses channel ATP. This term refers to the availability of an item for a certain sales channel, taking into account the sales limits for that channel.

For all other types of order promising functionality used in LN, the term CTP is used.

Acronym: ATP

Abbreviation: ATP

BCM

See: *bill of critical materials* (p. 134)

bill of critical materials

A bill of critical materials (BCM) indicates the components which are regarded as critical during the production process of a plan item.

A bill of critical materials is a kind of summary of the BOM, which contains only the more important components.

Typical examples of critical materials are:

- Components with long lead times
- Subassemblies with a high capacity load for the internal or external production system

The Enterprise Planning package uses the bill of critical materials to generate the critical material requirements for critical materials.

Synonym: BCM

bill of material (BOM)

A list of all parts, raw materials, and subassemblies that go into a manufactured item and show the quantity of each of the parts required to make the item. The BOM shows the single-level product structure of a manufactured item.

bshell

See: *LN shell* (p. 146)

by location

An outbound method that determines the physical outbound priority of a specific item. The inventory is issued from inventory based on the outbound priority of the locations. The inventory date will not be taken into account.

calendar

A set of definitions, that are used to build a list of calendar working hours. A calendar is identified by a calendar code and availability type combination.

capable-to-promise

The combination of techniques used to determine the quantity of an item that you can promise to a customer on a specific date.

Capable-to-promise (CTP) involves an extension of the standard available-to-promise (ATP) functionality. CTP goes beyond ATP in that it also considers the possibility of producing more than was initially planned, when an item's ATP is insufficient.

In addition to the standard ATP functionality, CTP comprises the following techniques:

- Channel ATP: restricted availability for a certain sales channel.
- Product family CTP: order promising on the basis of availability on product family level rather than on item level.
- Component CTP: check if there are enough components available to produce an extra quantity of an item.
- Capacity CTP: check if there is enough capacity available to produce an extra quantity of an item.

Abbreviation: CTP

capacity CTP check

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

The capacity CTP check is performed on resources in the item's bill of critical capacities or on the work centers of the item's routing, depending on the order horizon. Only the resources defined as CTP critical are checked.

capacity utilization

The number of hours that a resource is used for production.

Alternatively, a percentage indicating the capacity use as a proportion of the total available capacity.

channel master plan

An item-specific logistic plan that contains sales targets and constraints for a specific combination of a sales channel and plan item.

A channel is a grouping of customers and items.

A channel master plan supports sales-related functions such as demand forecasting and due-date quoting, as well as aggregation.

CLSO

See: *clustered line station order* (p. 136)

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.

clustered line station order

Represents all the material requirements for a line station for a day. A CLSO consists of user-defined buckets. The material requirements are combined for each bucket.

In Assembly Control, transactions can be carried out per line station and per period, instead of per order. LN can combine the same materials for a specific period into one material line. After doing so, the cumulated quantity is stored in the CLSO. This accumulation reduces the number of transactions that are necessary, because the transactions are performed for a specific bucket.

Acronym: CLSO

See: bucket

COLT

See: *cumulative order lead time (p. 139)*

commingle

To group a number of purchase orders that originate from different sources, into a single purchase order. Commingling reduces the number of purchase orders and enables you to obtain the best available prices and discounts.

component

An item that is sold, and invoiced in combination with other items as part of a kit.

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.

COPD

See: *customer order decoupling point (p. 139)*

cost calculation code

A specification of how a standard cost, valuation price, or sales price is calculated. The code stores specific cost calculation data.

The price calculation code that is defined in the Standard Cost Calculation Parameters (ticpr0100m000) session determines the standard cost. Other cost calculation codes are used for simulation purposes. The price calculation code for customized items is stored by project.

Example

- Specific operation rates
- Subcontracting rates
- Simulated purchase prices
- Surcharges

cost component

A cost component is a user-defined category for the classification of costs.

Cost components have the following functions:

- To break down an item's standard cost, sales price, or valuation price.
- To create a comparison between the estimated production order costs and the actual production order costs.
- To calculate production variances.
- To view the distribution of your costs over the various cost components in the Cost Accounting module.

Cost components can be of the following cost types:

- **Material Costs**
- **Operation Costs**
- **Surcharge on Material Costs**
- **Surcharge on Operation Costs**
- **WIP Transfer Costs**
- **General Costs**

Note

If you use Assembly Control (ASC), you cannot use cost components of the **General Costs** type.

cost object

A type of cost carrier for the resources used in your project.

These cost objects are available:

- **Material**
- **Labor**
- **Equipment**
- **Subcontracting**
- **Sundry Costs**
- **Overhead**

Cost objects can be standard or specific for a project. The cost object is related to a control code for cost controlling purposes.

country set

A user-defined group of countries.

critical capacity requirements

The production capacity of a resource, required by a plan item for the execution of that plan item's production plan.

The critical capacity requirements are based on a plan item's bill of critical capacities.

The critical capacity requirements are specified by plan period.

CTP

See: *capable-to-promise* (p. 135)

cumulative ATP

The total item quantity that you can promise to deliver in a particular plan period.

You can use the cumulative ATP to check the availability of an item when you receive a sales order or an inquiry.

Note

If the item's cumulative ATP is insufficient, LN can carry out a capacity and/or component CTP check to see if the demand can be met by increasing the production of the item.

cumulative capacity CTP

The total resource capacity that is still available for additional production up to and including a particular plan period.

cumulative order lead time

The total value of the item purchase lead time and the cumulative production lead time of all components.

Enterprise Planning uses the cumulative order lead time to determine the minimum value of the planning horizon.

Acronym: COLT

customer order decoupling point

The point in the product structure or production process up to which the material requisition is order-controlled. Beyond this point, anonymous production takes place.

Typical examples of CODP positions:

- The entire production process from purchasing components to final assembly is driven by customer orders.
- Standard components are manufactured based on forecasts; production of finished products is order-controlled.
- The production of finished products, subassemblies, and components is driven by forecasts (make-to-stock).

Abbreviation: COPD

demand forecast

The item quantity that is forecast to be required in a plan period. A demand forecast can be generated based on seasonal patterns 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.

With master planning, the dependent demand is equal to the sum of the following fields:

- dependent material demand
- dependent scheduled demand
- dependent distribution demand

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.

destination sales tax

Sales tax regulations in North America and Canada. The tax rates are determined by the local authorities in the jurisdiction where the goods or services are received or consumed. In many cases, tax must be paid to multiple jurisdictions with authority over the same location.

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 Warehousing is not involved.

In a Vendor Managed Inventory (VMI) setup, a direct delivery is achieved by creating a purchase order for the customer warehouse.

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.

economic order quantity

The amount of an item to be purchased or manufactured at one time. This amount is the quantity for which the combined costs of acquiring and carrying inventory are the lowest. This is also referred to as the minimum cost order quantity.

execution level

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

- Manufacturing
- Order Management
- Warehousing

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

fab period

The time period during which the supplier is authorized to manufacture the goods required on a schedule, calculated from the schedule issue date on for push schedules, and from the current date on for pull forecast schedules.

The fab period is expressed in a number of days.

Example

- CUM start quantity: 10000
- Schedule issue date/current date: 05.07.99
- Fab period: 20 days

Issue/current date	Quantity
05.07.99	100
12.07.99	100
19.07.99	100
26.07.99	100

Fab time fence : 05.07.99 (+ 20 days) = 25.07.99.

Fab authorization: 10000 + 100 + 100 + 100 = 10300.

FIFO

See: *first in, first out* (p. 142)

FIFO

See: *first in, first out (FIFO)* (p. 142)

financial transaction (FITR)

The transaction created to reflect a logistic event in Financials. The combination of a transaction origin (TROR) and the financial transaction (FITR) results in an integration document type.

first in, first out

A method of inventory valuation for accounting. The assumption is that the oldest inventory (first in) is the first to be used (first out), but there is no necessary relationship with the actual movement of specific items.

Acronym: FIFO

first in, first out (FIFO)

An inventory valuation method for accounting purposes. The assumption is that the oldest inventory value (first in) is the first to be used or sold (first out). However, this method assumes no necessary relationship with the actual physical movement of specific items.

FIFO can also be an outbound method that determines the physical outbound priority of a specific item. The oldest inventory is the first to be issued, taking into account the ordered packaging level, that is leading over the inventory date.

Example

A box containing 10 pieces is ordered and you have the following inventory:

- 5 pieces, receipt date 01-01
- 1 box containing 10 pieces, receipt date 05-01
- 1 box containing 10 pieces, receipt date 10-01
- 7 pieces, receipt date 15-01

If the outbound priority of the item is FIFO, the box with receipt date 05-01 is issued.

Abbreviation: FIFO

fixed lead time

The estimated time necessary to carry out a planned order.

To plan an order's lead time, Enterprise Planning can either use a fixed lead time or more detailed routing data. When using a fixed lead time, the results are less precise, but the calculation is faster.

fixed order quantity

A predetermined, fixed quantity of an item for which planned or actual orders are generated. If the net requirements for the period exceed the fixed order quantity, a multiple of the fixed quantity is ordered.

Generated orders always have a fixed order quantity.

floor stock

A stock of inexpensive material present in the job shop that can be used in production without recording each issue of material individually. Floor stock is not backflushed and is not part of the estimated costs.

FTP inventory valuation method

Fixed transfer pricing is an inventory valuation method. The fixed transfer price is a calculated inventory value, based upon calculated material costs, operation costs, and surcharges. The FTP valuation price includes the surcharges by warehouse.

generic item

An item that exists in multiple product variants. Before any manufacturing activities are performed on a generic item, the item must be configured to determine the desired product variant.

Example

Generic item: electric drill

Options:

- 3 power sources (batteries, 12 V or 220 V)
- 2 colors (blue, gray).

A total of 6 product variants can be produced with these options.

goods flow

A collective term for all transactions that influence the inventory of items, such as customer orders, production orders, and inventory adjustments.

Goods-flow data is recorded at the execution level of LN. When the goods-flow data in Enterprise Planning is updated, this data is loaded into Enterprise Planning as a basis for the planning. This data includes both historical and planned goods-flow transactions, as well as current inventory data.

For product families, LN generates the goods-flow data by aggregation through the aggregation relationships.

integration document type

Represents a type of Operations Management transaction for the purpose of mapping and posting the integration transactions to Financials and for financial reconciliation.

The integration document types supplied by LN each have the corresponding business object attached to them. For example, the integration document types for the various sales order transactions have the **Sales Order** business object linked to them.

integration transaction

A financial transaction that is generated through LN packages other than Financials. For each logistic transaction that must be reflected in Financials, LN generates an integration transaction, for example, Purchase/Receipt, Production/WIP Transfer, and Project/Costs of Goods Sold. LN posts the integration transaction to the ledger accounts and dimensions defined in the integration mapping scheme.

inventory date

A date that is assigned to items when they are stored. You can use inventory dates to retrieve items based on FIFO (First In First Out) or LIFO (Last In First Out), without carrying out extensive lot control.

The meaning of the inventory date is connected to the outbound priority of LIFO, FIFO, or the product expiry date of the item.

With outbound priority LIFO or FIFO, the default for the inventory date is the system date; however, you can overwrite this so that the inventory date does not have to be equal to the storage date. If the item has a particular shelf life, the inventory date is the product expiry date defined for the item.

inventory unit

The unit of measure in which the inventory of an item is recorded, such as piece, kilogram, box of 12, or meter.

The inventory unit is also used as the base unit in measure conversions, especially for conversions that concern the order unit and the price unit on a purchase order or a sales order. These conversions always use the inventory unit as the base unit. An inventory unit therefore applies to all item types, also to item types that cannot be kept in stock.

inventory valuation method

A method to calculate the inventory value.

The inventory is valued at either its fixed price or its actual receipt price. Because inventory value can change with time, the age of inventory needs to be noted. In LN, the following inventory valuation methods are available:

Valuation Method

invoicing batch

Selects the order types and orders to be invoiced. If you process an invoicing batch, LN selects the invoicing data and generates the invoices for the order types and orders selected through the invoicing batch.

invoicing batch template

Defines the type and number of orders that you can select through the invoicing batch. For example, the types of orders can be Sales, Freight, Projects, or Service, and the number of orders of each type can be **None**, **One**, or **Several**.

invoicing options

Define the text and the layout of the printed invoices and whether or not you can overwrite the default transaction types and series used for the invoice document numbering.

item master plan

An item-specific, overall logistic plan that contains planning data and logistic targets for sales, internal and external supply, and inventory. All planning data in the item master plan is specified by plan period. Enterprise Planning uses this data to carry out master-planning simulations.

Within the item master plan, you can distinguish the following subplans:

- demand plan
- supply plan
- inventory plan

In addition, an item's master plan contains information about actual demand, actual supply, planned supply in the form of planned orders, and expected inventory.

If an item has a master plan and channels have been defined for this item, each channel usually has its own channel master plan. A channel master plan contains channel-specific information only, that is, demand data and information about sales restrictions.

Item master plans and channel master plans are defined within the context of a scenario. These scenarios can be used for what-if analyses. One of the scenarios is the actual plan.

item surcharge

An item surcharge is the basis for extra costs or discounts (in terms of percentage of fixed amounts) in the cost/valuation price structure for items belonging to the given item group or warehouse. Surcharges are linked to a price calculation code.

Kanban

A demand-pull system of just-in-time production that regulates the supply of items to shop floor warehouses.

Kanban uses standard containers or lot sizes (also called bins) to deliver items to shop floor warehouses. In the shop floor warehouse, two or more bins are available with the same items. Items are only taken from one bin. If a bin is empty, a new bin is ordered and the items are taken from the (second) full bin. To each bin a label is attached. The line stations use the label to order a full bin with the required items. As a result, no inventory administration is done in the shop floor warehouse for the floor stock items that are used.

last in, first out (LIFO)

An inventory valuation method for accounting purposes. The assumption is that the most recently received value item (last in) is the first to be used or sold (first out). However, this method assumes no necessary relationship with the actual physical movement of specific items.

LIFO can also be an outbound method that determines the physical outbound priority of a specific item. The newest inventory is the first to be issued, taking into account the ordered packaging level, that is leading over the inventory date.

Example

A box containing 10 pieces is ordered and you have the following inventory:

- 5 pieces, receipt date 01-01
- 1 box containing 10 pieces, receipt date 05-01
- 1 box containing 10 pieces, receipt date 10-01
- 7 pieces, receipt date 15-01

If the outbound priority of the item is LIFO, the box with receipt date 10-01 is issued.

Abbreviation: LIFO

LIFO

See: *last in, first out (LIFO)* (p. 146)

LN shell

The LN shell is a program that runs the LN applications. The LN shell serves as an interface program between the LN applications, operating system, user interface, and database. This open systems architecture allows the LN applications to operate on all supported combinations of operating systems, user interfaces, and databases.

Synonym: virtual machine

Acronym: bshell

logistic agreements

Conditions that must be formally agreed upon between a supplier and a customer regarding logistic data, such as schedule messages, frozen periods, authorizations, delivery patterns, carrier, and so on.

lot price (lot)

An inventory valuation method for accounting purposes that is used to separately calculate the lot price or standard cost for each lot. The lot price is based on the actual receipt price.

lot size

The number of items in a lot.

manufactured item

The items that can be manufactured end products and subassemblies. A manufactured item is usually associated with a bill of material and a routing that describe the components used to assemble it and the manner in which it is assembled. Manufactured items are also referred to as production items and can be purchased.

mapping element

A property of a logistic transaction that you can use to define the ledger account and dimensions for an integration transaction. You can post the transactions with specific values of the mapping elements to specific ledger accounts. A mapping element consists of the combination of a business object and a business object attribute. For example, the **Item Group/ Item** mapping element represents the **Item Group** business object attribute of the **Item** business object.

Example

Some examples of the mapping elements of a warehouse receipt transaction are: item, item group, warehouse, and cost component.

master-based planning

A planning concept in which all planning data is accumulated into time buckets with predefined lengths.

In master planning, all demand, supply, and inventory data is handled in terms of these time buckets, and is stored in master plans.

In master planning, supply is planned in the form of a supply plan. This supply plan is calculated on the basis of demand forecasts, actual orders, and other information. For production planning, this planning method only considers critical requirements, as recorded in an item's bill of critical materials and bill of critical capacities.

Note

In Enterprise Planning, you can maintain a master plan for an item, even if you plan all supply with order planning.

master-planning horizon

That part of the planning horizon which falls outside the order horizon, and for which Enterprise Planning uses master planning to plan supply.

The master-planning horizon is not defined on its own, but depends on the definition of the order horizon and the planning horizon.

If the order horizon coincides with the planning horizon, there is no master horizon. In this case, Enterprise Planning plans all supply with order planning.

matrix priority

For a matrix type, the order in which matrix definitions are searched for.

microrouting

A series of steps that is linked to a routing operation to which you can connect instructions, tools information, and process information. When a production order is released, the information that is linked to the operation steps is given to, for example, the job shop operators to support their jobs.

See: operation step

moving-average unit cost (MAUC)

An inventory valuation method for accounting purposes.

The MAUC is the average value for each unit of the current inventory. For each new receipt the MAUC is updated.

operation storage horizon

The number of future working days for which LN stores the operations for planned orders.

For planned orders beyond the operation storage horizon, you cannot analyze the capacity use of planned orders and you cannot transfer the planned orders to the execution level.

order-based planning

A planning concept in which planning data is handled in the form of orders.

In order planning, supply is planned in the form of planned orders. LN takes into account the start and finish dates of individual planned orders. For production planning, this method considers all material and capacity requirements, as recorded in an item's BOM and routing.

Note

In Enterprise Planning, you can maintain a master plan for an item, even if you plan all supply with order planning.

order controlled/single

A demand-pull system that regulates the supply of items to shop floor warehouses.

In this supply system, a specific production order for a specific product pulls the required items from a supply warehouse to the shop floor warehouse. A direct link is established between the production order for which the items are required, and the warehousing order that regulates the supply of the required items to the shop floor warehouse.

order horizon

The time period for which Enterprise Planning uses order-based planning to plan supply.

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

If the order horizon is zero, Enterprise Planning does not use order-based planning for the item involved.

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

If you did not specify an enterprise unit for the default warehouse of the plan item, Enterprise Planning uses the company calendar to calculate the order horizon.

Note

LN moves the order horizon towards the end of the plan period) in which it falls, because Enterprise Planning must know whether a plan period falls within the order horizon.

order lead time

The production time of an item expressed in hours or days, based on the lead time elements as defined in the routing operations.

order system

The order parameter that controls the way by which recommended purchase and production orders are generated.

Options:

- **FAS** (final assembly scheduling).
- **SIC** (statistical inventory control).
- **Planned** (schedule-based and order-based planning).
- **Manual** (manual reordering).

phantom

An assembly that is produced as part of a manufactured item, and that can have its own routing.

A phantom is usually not held in inventory, although occasionally some inventory can exist. The planning system does not create material requirements for a phantom, but drives the requirements straight through the phantom item to its components. Phantoms are mainly defined to create a modular product structure.

Example

The door of a refrigerator is defined as a phantom item in the bill of material of a refrigerator. The materials of the door are listed on the production order's material list for the refrigerator.

phase number

A number that determines the order in which plan units and plan items are planned.

As a rule, plan units and plan items are planned in order of increasing phase number: first phase number 0, then phase number 1, and so on.

An item has separate phase numbers for master planning and order planning. For items that belong to a plan unit, the master phase-number equals the plan unit's master phase-number.

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 the following:

- Master-based planning, which is similar to master production scheduling techniques.
- Order-based planning, which is 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 delivery date

The planned date on which the items on the order/schedule line must be delivered. The planned delivery date cannot occur before the order date/schedule generation date.

planned inventory transactions

The expected changes in the inventory levels due to planned orders for items.

planned warehouse order

An order created in Sales that forms the basis for most schedule-related processes. Planned warehouse orders, which are created during sales schedule approval, decouple schedule updates and revisions from warehouse orders. They serve as the interface between Sales on one hand and Warehousing and Invoicing on the other hand.

plan period

One of a series of time buckets into which all planning data in a master plan is accumulated.

Plan periods are defined in the context of a scenario.

Plan periods are identified by a period number, and are defined in days, weeks, or months.

pricing information

Pricing information includes prices, discounts, promotions, and freight rates. If pricing matrices are used, pricing information is maintained for sets of attributes and values. The attributes are defined in matrix definitions and the values in the relevant pricing matrix.

Example

You can define a price for the following attributes and values:

Attribute	Value
Sold-to business partner	Apex Wholesalers, Inc.
Delivery terms	CoD (cash on delivery)
Item	Can opener aw10

pricing matrices

A Pricing matrix is an entity in which prices, discounts, freight rates, or promotions are maintained for customers, suppliers and/or items.

In Pricing, these types of matrices are available:

- Price matrices
- Discount matrices
- Promotion matrices
- Freight Rate matrices

Essentially, a Pricing matrix includes the following elements:

- A matrix type
- A matrix definition
- A set of matrix attributes
- Pricing information, such as price books, discount schedules, promotions, or freight rate books

The matrix type and the matrix definition determine the available matrix attributes. The pricing information is determined by the type of Pricing matrix.

Example

In a price matrix, you can specify a price for the following attributes and values:

Attribute	Value
Sold-to business partner	Apex Wholesalers
Delivery terms	CoD (cash on delivery)
Item	Can opener aw10

When an order is entered for Apex Wholesalers for item Can opener aw10, and the delivery terms are CoD, the price maintained in the price matrix is used to calculate the price for the order.

product variant

A unique configuration of a configurable item. The variant results from the configuration process and includes information such as feature options, components, and operations.

Example

Configurable item: electric drill

Options:

- 3 power sources (batteries, 12 V or 220 V)
- 2 colors (blue, gray).

A total of 6 product variants can be produced with these options.

projected inventory

The expected inventory level at the end of a plan period.

Note that the projected inventory of plan periods that are entirely in the past equals the inventory on hand.

promising status

A status that informs you about whether a sales quotation line, sales order line, or sales component line can be promised to a customer, or whether inventory checks must still be carried out or insufficient inventory situations must still be resolved for the line.

promotion

The application of an additional discount, value off, or premium to a sales order based on predefined order levels of selected items. Two basic types of promotions exist: order level and line level.

purchased item

An item that is typically procured from an outside source. A bill of material and routing can be linked to a purchased item.

purchase invoice matching

To ensure that the purchase invoice is correct, by linking the invoice to purchase orders and purchase receipts.

purchase requisition

A request by a user to obtain authorization for the procurement of goods and services.

A purchase requisition includes both standard and nonstandard material, cost, or service requirements. Information on a purchase requisition includes name, department, location, purchase office, and approver in the header section. The requisition line detail includes item, supplier, quantity, price, and amount.

A purchase requisition can be converted to one of the following:

- Purchase order
- Request for quotation (RFQ)

reconciliation

To match related financial data from different sources to detect differences. Usually, reconciliation results in a report that you can use to view the matched data, the totals, and the detected differences.

For example:

- To compare the cash balance as reported by the bank with the cash balance of the company's books.
- To compare the logistic transactions with the related postings in Financials.

reconciliation element

A property of a logistic transaction that you can use to trace the transaction for reconciliation. The reconciliation elements correspond with the mapping elements of the business objects.

reconciliation group

Represents a group of integration ledger accounts on which you can perform reconciliation. A reconciliation group consists of the combination of a reconciliation area and a subarea, for example, **Invoice Accrual/ Purchase Order WIP**.

request for quotation (RFQ)

A purchasing document that is used as a request to bidders to submit their terms, such as price, discount, delivery time, and payment terms for delivering a (quantity of a) product.

You can send the RFQ to several bidders. A bidder can submit an RFQ response for the specified items.

You can record the responses, negotiate, and compare the prices and discounts that are offered by different bidders.

An accepted response can be copied to a contract, an order, or a price book.

resource

A group of machines or employees in Enterprise Planning, corresponding to a work center in other LN packages.

Each operation performed to manufacture an item requires a certain capacity amount from a resource (for example, production hours). The capacity of the resource can be a constraint in the planning.

The availability of a resource can be specified by using the resource calendar.

resource master plan

A time-phased overview of the capacity use at a certain resource.

In a resource master plan, the following types of capacity use are recorded per plan period:

- Critical capacity requirements from master-based planning.
- Capacity use related to planned orders.
- Capacity use related to JSC (production) orders and service activities.
- Capacity use related to PCS (project) activities.

In addition, the resource master plan contains capacity CTP information.

rolling scenario

A particular type of scenario that is shifted forward in time. You can specify a rolling frequency to determine the number of days after which LN must roll the scenario.

In the course of time, the current date will reach or exceed a certain reference date plus the rolling frequency. When this is the case, the scenario's start date and finish date, the plan period division, and the reference date itself are shifted forward.

rounding factor

Indicates how LN rounds off entered and calculated amounts or quantities. The quantities and amounts are rounded off to the nearest multiple of the rounding factor. For example, if the rounding factor is 0.030000, a quantity of 2,11 is rounded off to 2,10 ($= 70 * 0.030000$). A quantity of 2,12 is rounded off to 2,13 ($= 71 * 0.030000$).

The following differences exist between rounding factors for currencies and for units:

- LN applies the rounding factor for units immediately when the users enter the data. LN applies the rounding factor for currencies not to the amounts entered, but after performing the applicable calculations.
- In some cases, you can change rounding factors for units, but you cannot do this for currencies.

sales contract

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

A contract is comprised of the following:

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

sales 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, payment terms, and delivery terms 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.

sales quotations

A statement of price, the terms of sale, and a description of goods or services offered by a supplier to a prospective purchaser; a bid. The customer data, payment terms, and delivery terms are contained in the header; the data about the actual items is entered on the quotation lines. When given in response to a request for quotation, a bid is usually considered an offer to sell.

sales schedule

A timetable of planned supply of materials. Sales schedules support long-term sales with frequent deliveries. All requirements for the same item, sold-to business partner, ship-to business partner, and delivery parameter are stored in the same sales schedule.

scenario

The identification of an overall planning solution.

Each scenario represents one overall planning solution, and involves particular settings for the planning of items and resources. You can use scenarios to analyze and compare various planning options and to find the best planning solution. For example, you can vary demand forecasts or sourcing strategies.

One of the scenarios is the actual scenario, which corresponds with the actual planning situation. You can only transfer planned orders and production plans from the actual scenario to the execution level of LN.

serial price

An inventory valuation method for accounting purposes that is used to separately calculate the price or standard cost for each low volume serialized item. The serial price is based on the actual receipt price. For more information, refer to Low volume scenario.

session

An elementary part of LN the user can start to run an application's functionality. Usually, a session is linked to a main database table and a program script. In addition, a session uses zero or more forms, reports, and charts.

The code of a session consists of a package code, a module code, four digits that indicate the main table number and the session type, an m or an s, and three additional digits, for example, Countries (tcmcs0510m000).

SIC

See: *statistical inventory control* (p. 158)

simulation codes

The simulations that help you calculating the priority sequence in which inventory is allocated to orders.

soft peg

A relationship between an item supply and an item requirement that LN stores for informational purposes. If you replan an item, you lose the related soft pegs.

- **Pegged supply**
The pegged supply can be a purchase order, a planned purchase order, a production order, a planned production order, a warehousing order with transaction type transfer, or a planned distribution order.
- **Pegged requirement**
The pegged requirement can be, among other things, a sales order line or a required component for a production order.

In Enterprise Planning, the term *pegging* is generally used to denote soft pegs.

Related term: demand peg

statistical inventory control

An order system in LN that generates planned purchase or production orders to replenish stock.

The reorder point is usually calculated by adding the safety stock and the forecasted requirements during the replenishment lead time.

SIC items are planned by Warehousing.

Abbreviation: SIC

stock point

The smallest inventory level that can be registered in LN.

The stock point is defined by the following data:

- Warehouse
- Location: only if you have locations
- Item
- Inventory date: important if you work with LIFO or FIFO
- Lot: only if the item is low volume lot controlled

success percentage

A percentage associated with a quotation that represents the probability of the business partner accepting the quotation. Acceptance results in the conversion of the quotation into a sales order.

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.

surcharge

The indirect costs of an item, for example, overhead costs, storage costs, handling costs, and machine-maintenance costs. Surcharges can be defined as a percentage or as a fixed amount and can contribute to fixed and variable costs.

tax code exception

A set of transaction details for which you define a tax code and/or tax country and business partner tax country other than the values that result from the standard tax code derivation.

tax exemption

Being exempt from tax. Transactions with specific business partners, involving specific goods, and/or with their origin or destination in certain countries or areas, can be exempt from tax. Sales invoices for transactions that are exempt from tax must have zero tax amounts.

Some enterprises are exempt from sales tax within the jurisdiction of certain tax authorities. Invoices for sales to a customer with a valid tax exemption must have zero tax amounts. If you are exempt from sales tax, your suppliers must not include the tax amount on their invoices.

tax provider

A third party application that facilitates the calculation of taxes.

time fence

The date until which an item's supply plan and planned orders are frozen.

The time fence is expressed as a number of working days or working hours from the date you carry out the simulation.

As a rule, Enterprise Planning does not regenerate the supply plan or the planned orders within the time fence. However, you can overrule this behavior when you run a master-plan simulation or order simulation.

The time fence is meant to prevent:

- Disturbance of orders that have already started (at the shop-floor level).
- Generation of planned orders with start dates in the past (that is, orders that are late).

Usually, the lead time of an item's production process is a reasonable value for the time fence.

time-phased order point (TPOP)

A push system that regulates the time-phased supply of items to warehouses.

The quantity of items that is supplied to the warehouse depends on:

- The available inventory in the warehouse.
- The inventory that is planned to be delivered to the warehouse within the specified order horizon.
- The specified safety stock, optionally adjusted to the seasonal factor for the current period, for the item and warehouse.

If the available inventory plus the planned inventory are below the reorder point, the inventory in the warehouse is replenished.

Abbreviation: TPOP

See: safety stock

TPOP

See: *time-phased order point (TPOP)* (p. 160)

virtual machine

See: *LN shell* (p. 146)

work center

A specific production area consisting of one or more people and/or machines with identical capabilities, that can be considered as one unit for purposes of the capacity requirement planning and detailed scheduling.

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