# EWM125

# Labor Management in Extended Warehouse Mangement

*SAP SCM*

Date _____

Training Center _____

Instructors _____

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Education Website _____

## Participant Handbook

Course Version: 96
Course Duration: 1 Day(s)
Material Number: 50104395

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## Disclaimer

# About This Handbook

This handbook is intended to complement the instructor-led presentation of this course, and serve as a source of reference. It is not suitable for self-study.

## Typographic Conventions

American English is the standard used in this handbook. The following typographic conventions are also used.

| Type Style | Description |
|---|---|
| *Example text* | Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths, and options.<br>Also used for cross-references to other documentation both internal and external. |
| **Example text** | Emphasized words or phrases in body text, titles of graphics, and tables |
| EXAMPLE TEXT | Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example SELECT and INCLUDE. |
| `Example text` | Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, and passages of the source text of a program. |
| **`Example text`** | Exact user entry. These are words and characters that you enter in the system exactly as they appear in the documentation. |
| **`<Example text>`** | Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries. |


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## Icons in Body Text

The following icons are used in this handbook.

| Icon | Meaning |
| --- | --- |
|  | For more information, tips, or background |
|  | Note or further explanation of previous point |
|  | Exception or caution |
|   | Procedures |
|  | Indicates that the item is displayed in the instructor's presentation. |

# Contents





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# Course Overview

This course covers the customizing settings for implementing labor management in Extended Warehouse Management.

## Target Audience

This course is intended for the following audiences:

- Customer project team members
- SAP consultants
- SAP partners

## Course Prerequisites

### Required Knowledge

- EWM110

### Recommended Knowledge

- EWM120

## Course Goals

This course will prepare you to:

- Set up processes with labor management
- Maintain the required data for labor management like processors and engineered labor standards

## Course Objectives

After completing this course, you will be able to:

- Activate labor management
- Set up processes that labor management is being used

# Unit 1

# More About EWM

## Unit Overview

As a participant of EWM125, you should already have some knowledge about Extended Warehouse Management. In this unit we will repeat some basic concepts of EWM and set up warehouse numbers for use in this course.

## Unit Objectives

After completing this unit, you will be able to:

- Describe the warehouse scenario used in EWM125

## Unit Contents

# Lesson: Scenario Introduction

## Lesson Overview

In this lesson you will create some initial settings that are required for other lessons in this course. This will help you to understand the system setup used in this course and to review the basic settings required for SAP Extended Warehouse Management.

## Lesson Objectives

After completing this lesson, you will be able to:

- Describe the warehouse scenario used in EWM125

## Business Example

Your company is planning to implement SAP EWM. You have basic integration and process knowledge from participating in EWM110 and want to implement additionally labour management. You want to understand the scenario used in this course.

## SAP Extended Warehouse Management

SAP Extended Warehouse Management (SAP EWM) offers you flexible, automated support for processing various goods movements and for managing stocks in your warehouse complex. The system supports planned and efficient processing of all logistics activities in your warehouse. It is the most advanced and flexible of the warehouse solutions offered by SAP.

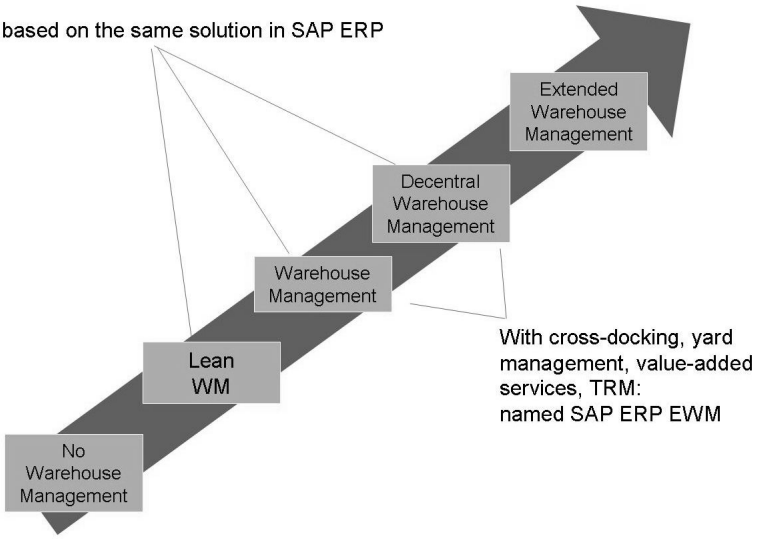


**Figure 1: SAP Warehouse Management Solutions**

SAP EWM uses the SAP SCM core and can share one server with other SAP SCM applications like Advanced Planning and Optimization (APO) or Event Management (EM). In regards to performance considerations, SAP EWM can also run on its own server. Additionally, SAP EWM can be deployed on top of an SAP ERP system. That way the system resources are shared. Nevertheless, SAP EWM still behaves like a decentralized system, and the communication requirements are the same as before.

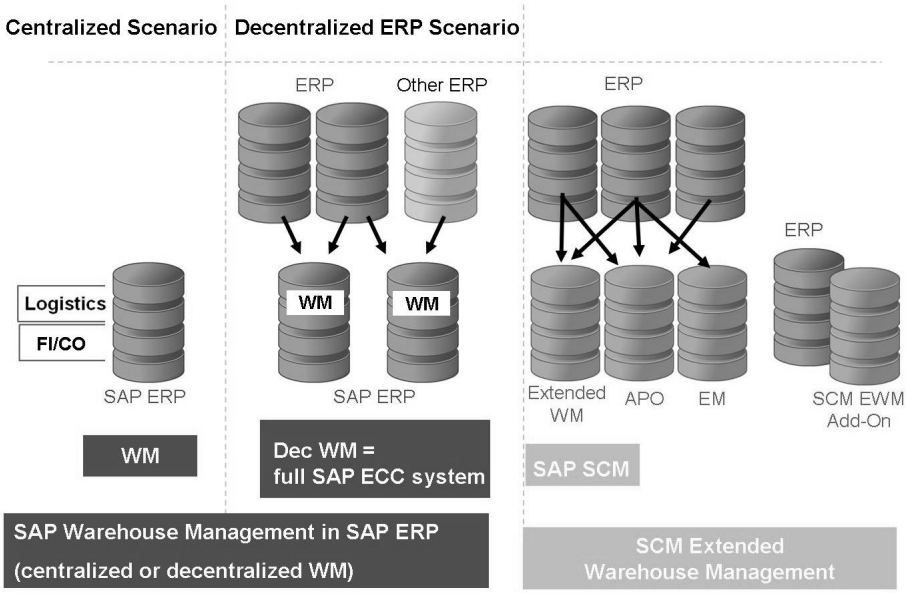


**Figure 2: Warehouse Management and SAP EWM Implementation Scenarios**

The usage of SAP EWM is determined by the settings in the warehouse number in ERP. The setup of this warehouse number shows the ERP system what solution is being used: warehouse management in the central system, a decentralized WM, or SAP Extended Warehouse Management.

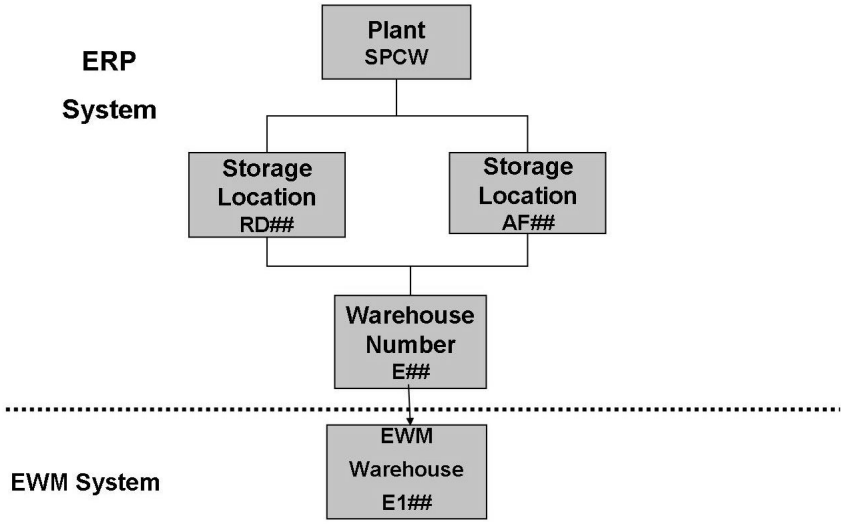


**Figure 3: Organizational Connection Through the Warehouse Number**

SAP EWM requires an assignment of ERP warehouse numbers to SAP EWM warehouse numbers, as the names in EWM can be longer and do not have to correspond to the names in ERP.

The communication between ERP and SAP EWM happens in two different ways:

- For master data, the **core interface** (CIF) is used. CIF is the technology generally used for communication between ERP and SCM. For SAP EWM, the master data is only transferred from ERP to EWM; there is no communication back via CIF.
- For communicating delivery information between the systems, a **separate distribution model**, which uses queued remote function calls (qRFCs), is set up. This distribution model exists already in SAP EWM. You have to create it in customizing in ERP for every warehouse number you activate as administrated by SAP EWM.

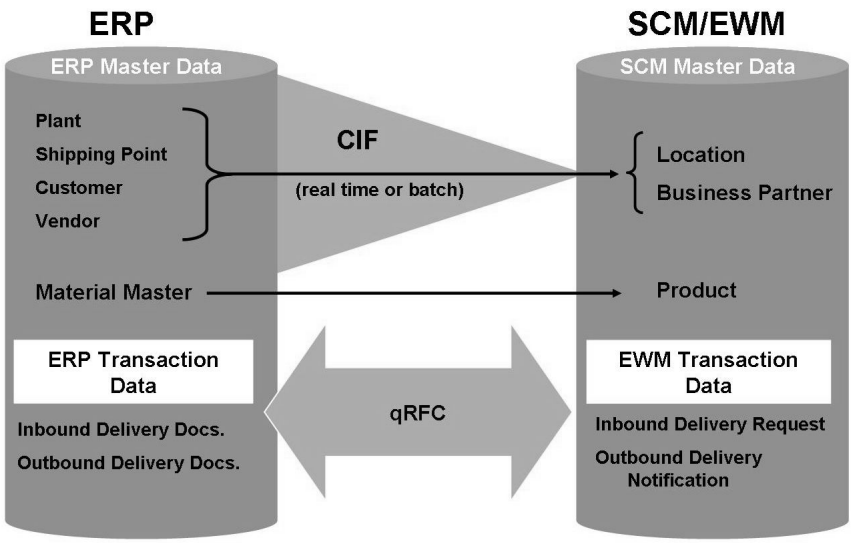


**Figure 4: Communication Between ERP and EWM**

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# Exercise 1: EWM125 Introduction

## Exercise Objectives

After completing this exercise, you will be able to:

- Create the initial setup required for the other exercises in EWM125
- Repeat some of the settings taught in EWM110

## Business Example

You want to understand the scenario used in EWM125.

## Task 1:

Set up the warehouse number E## in ECC for use with EWM.

1. Activate your warehouse number E## in ECC for the usage of SAP Extended Warehouse Management. You use queued and serialized RFCs and batch determination shall be done in SAP EWM.
2. Check the integration model for the warehouse number E##. The logical system name of the EWM system is “APOCLNT800”, and the distribution model view is “EWM”.

## Task 2:

Set up the warehouse number E1## in EWM to work for the warehouse number E##. The storage locations AF## and RD## are used.

1. Connect the warehouse E1## in EWM to the E## in the Business System R3_800.
2. Storage location **AF##** shall be assigned to availability group **002**, and storage location **RD##** to the availability group **001**.

## Task 3:

Create a CIF integration model. Activate the integration model and check that the products, locations, and business partners have been created.

1. Create a CIF integration model for all your materials (that means ending on your group number).

| | |
|---|---|
| *Model Name* | **GR##EWM120** |
| *Logical System* | **APOCLNT800** |
| *APO Application* | **MD** |

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| | |
|---|---|
| *Materials* | **T-EW*##** |
| *Plant* (just for material selection) | **SPCW** |

Save a variant for your selection (*Variant Name*: **GR##EWM120**; *Description*: **MD for EWM120**) and create the integration model.

2. Activate the integration model.

| | |
|---|---|
| *Model Name* | **GR##EWM120** |
| *Logical System* | **APOCLNT800** |
| *APO Application* | **MD** |

## Task 4:

Test your settings. Create a purchase order and an inbound delivery. Create the warehouse tasks and confirm them.

1. Create a purchase order with the following details:

   Header data:

| | |
|---|---|
| *Vendor* | **EWM-VEND** |
| *Purch. Org.* | **1000** |
| *Purch. Group* | **000** |
| *Company Code* | **1000** |

   Item:

| | |
|---|---|
| *Material* | **T-EW04-##** |
| *PO Quantity* | **500** |
| *Net Price* | **5** |
| *Plnt* | **SPCW** |
| *Stor. Location* | **RD##** |
| *Conf. Control* | **ANLI Inbound Delivery ECC** |

   Purchase order: _____

2. Create the inbound delivery for the purchase order. Use the **Purchase Order Number** as *External ID*.

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Inbound delivery:

_____

3. Create the *Warehouse Tasks* for the inbound delivery and confirm them.
   EWM inbound delivery:

   _____



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# Solution 1: EWM125 Introduction

## Task 1:

Set up the warehouse number E## in ECC for use with EWM.

1. Activate your warehouse number E## in ECC for the usage of SAP Extended Warehouse Management. You use queued and serialized RFCs and batch determination shall be done in SAP EWM.

   a) Select in the implementation guide (IMG) of the **ECC** system by choosing *Logistics Execution → Extended Warehouse Management Integration → Basic Setup of EWM Connectivity → Maintain Extended WM-Specific Parameters*.

   b) Position on warehouse E## and set the *Ext. WM* entry to **`E ERP with EWM (Extended Warehouse Management)`**.

   Check the entries for the other fields:

| | |
|---|---|
| *Comm. WM* | **`Q Queued and Serialized Asynchronous RFC`** |
| *UD* | leave blank |
| *Dist. Mode* | **`Distribution immediately at document creation`** (default) |
| *SN Dec. WM* | **`X`** (default) |
| *BatchDetEW* | **`X`** |
| *GR from EWM only* | leave blank |

   c) *Save* your entry.

   d) Choose *Exit* to leave the transaction.

2. Check the integration model for the warehouse number E##. The logical system name of the EWM system is “APOCLNT800”, and the distribution model view is “EWM”.

   a) Select in the implementation guide (IMG) of the **ECC** system: *Logistics Execution → Extended Warehouse Management Integration → Basic Setup of EWM Connectivity → Generate Distribution Model ERP=>EWM*.

   b)

   Enter the following parameters:

*Continued on next page*

| | |
|---|---|
| *Warehouse Number* | **E##** |
| *EWM's Logical System* | **APOCLNT800** |
| *Distribution Model View* | **EWM** |
| *Objects* | Select: **Both** |
| *Action* | Select: **Check entries** |

c) Choose *Execute* and check if the pop-up displays **Everything OK for WhseNo E##**.

**Hint:** Contact your instructor if the messages indicates an error.

d) Choose *Exit* to leave the transaction.

## Task 2:

Set up the warehouse number E1## in EWM to work for the warehouse number E##. The storage locations AF## and RD## are used.

1. Connect the warehouse E1## in EWM to the E## in the Business System R3_800.

   a) Select in the implementation guide (IMG) of the **EWM** system: *Extended Warehouse Management → Interfaces → ERP Integration → General Settings → Map Warehouse Numbers from ERP System to EWM*.

   b) Choose the *New Entries* button.

   c) Create the following new entry:

| *Business System* | *WNo ERP* | *Warehouse Number* |
|---|---|---|
| **R3_800** | **E##** | **E1##** |

   d) *Save* your entry.

   e) Choose *Exit* to leave the transaction.

*Continued on next page*

  

2. Storage location **AF##** shall be assigned to availability group **002**, and storage location **RD##** to the availability group **001**.

   a) Select in the implementation guide (IMG) of the **EWM** system *Extended Warehouse Management → Interfaces → ERP Integration → Goods Movement → Map Storage Locations from ERP System to EWM*.

   b) Create two new entries:

| *Plnt* | *Sloc* | *Logical System* | *Warehouse Number* | *Agr* |
|---|---|---|---|---|
| **SPCW** | **AF##** | **T90CLNT090** | **E1##** | **002** |
| **SPCW** | **RD##** | **T90CLNT090** | **E1##** | **001** |

   c) *Save* your entries.

   d) Choose *Exit* to leave the transaction.

## Task 3:

Create a CIF integration model. Activate the integration model and check that the products, locations, and business partners have been created.

1. Create a CIF integration model for all your materials (that means ending on your group number).

| | |
|---|---|
| *Model Name* | **GR##EWM120** |
| *Logical System* | **APOCLNT800** |
| *APO Application* | **MD** |

| | |
|---|---|
| *Materials* | **T-EW*##** |
| *Plant* (just for material selection) | **SPCW** |

*Continued on next page*

Save a variant for your selection (*Variant Name*: **GR##EWM120**; *Description*: **MD for EWM120**) and create the integration model.

a) Select in the Easy Access Menu of your ECC system: *Logistics → Central Functions → Supply Chain Planning Interface → Core Interface Advanced Planner and Optimizer → Integration Model → Create*.

b) Flag the *Materials* field .

Enter in the section *General Selection Options for Materials* for the *Material* **T-EW*##** and the *Plnt*, **SPCW**.

c) Choose *Save* to save your selection as a variant. Enter the *Variant Name*: **GR##EWM120** and the *Description*: **MD## for EWM120** and choose *Save* again.

d) Choose *Execute* and control the number of selected **Filter Objects**. There should be 30 Material Master Data.

e) Choose *Generate IM* .

f) Choose *Exit* twice to leave the transaction.

2. Activate the integration model.

| | |
|---|---|
| *Model Name* | **GR##EWM120** |
| *Logical System* | **APOCLNT800** |
| *APO Application* | **MD** |

a) In the Easy Access Menu of your ECC system, choose *Logistics → Central Functions → Supply Chain Planning Interface → Core Interface Advanced Planner ann Optimizer → Integration Model → Activate*.

The *Selection Criteria* field should already be filled.

b) Choose *Execute* .

c) Select the line **MD** and select the integration model. Set it to **Active** (either by clicking on the *New Status* field or by selecting the *Active/Inactive* button), then select *Start* (Activation) .

d) Check if the log shows any error messages.

e) Choose *Exit* twice to leave the transaction.

*Continued on next page*

  

## Task 4:

Test your settings. Create a purchase order and an inbound delivery. Create the warehouse tasks and confirm them.

1. Create a purchase order with the following details:

   Header data:

| | |
|---|---|
| *Vendor* | **EWM-VEND** |
| *Purch. Org.* | **1000** |
| *Purch. Group* | **000** |
| *Company Code* | **1000** |

   Item:

| | |
|---|---|
| *Material* | **T-EW04-##** |
| *PO Quantity* | **500** |
| *Net Price* | **5** |
| *Plnt* | **SPCW** |
| *Stor. Location* | **RD##** |
| *Conf. Control* | **ANLI Inbound Delivery ECC** |

   Purchase order:

   _____

   a) In the Easy Access Menu of your ERP system, choose *Logistics* → *Materials Management* → *Purchasing* → *Purchase Order* → *Create* → *Vendor/Supplying Plant Known*.

   b) Enter the details as described in the table.

   c) *Save* your purchase order. Note down the purchase order number.

   d) Choose *Exit* to end the transaction.

2. Create the inbound delivery for the purchase order. Use the **Purchase Order Number** as *External ID*.

*Continued on next page*

Inbound delivery:

_____

a) In the Easy Access Menu of your ERP system, choose *Logistics* → *Logistics Execution* → *Inbound Process* → *Goods Receipt for Inbound Delivery* → *Inbound Delivery* → *Create* → *Single Documents*.

b) *Save* your inbound delivery. Note down the inbound delivery number.

c) Choose *Exit* to end the transaction.

3. Create the *Warehouse Tasks* for the inbound delivery and confirm them.

EWM inbound delivery:

_____

a) In the Easy Access Menu of your EWM system, choose *Extended Warehouse Management* → *Delivery Processing* → *Inbound Delivery* → *Maintain Inbound Delivery*.

b) In the *Search criteria* dropdown, select the entry *ERP Document*. Enter your delivery number and choose *Perform Search*. Note down the number of the inbound delivery.

c) Select the inbound delivery and choose *Inbound Delivery* → *Follow-on Functions* → *Warehouse Task*.

d) Choose *Create* + *Save*.

e) Choose *Warehouse Task* → *Confirm*.

f) Use *Select All* to select all warehouse orders.

g) Choose *Confirm* + *Save*.

h) Choose *Exit* three times to end the transaction.

## Lesson Summary

You should now be able to:

- Describe the warehouse scenario used in EWM125

## Unit Summary

You should now be able to:

- Describe the warehouse scenario used in EWM125



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# Unit 2

# Labor Management

## Unit Overview

Labor management helps you to plan labor times and resources in your warehouse more effectively, thereby making your warehouse more productive. In this unit you will learn the settings for labour management.

## Unit Objectives

After completing this unit, you will be able to:

- Describe the features and functions of Labor Management.
- Activate Labor Management
- Explain the role of the processor master data and create processor master data in EWM
- Configure external steps and activities for Labor Management
- Configure preprocessing
- Define the purpose of engineered labor standards
- Configure the use of ELS in EWM
- Use the formula and condition editors
- Explain the basic concepts and use of the travel distance calculation function.
- Explain the features of indirect labor tasks.
- Create and record indirect labor tasks.
- Make the configuration settings related to indirect labor tasks.
- Select and evaluate indirect labor tasks using the warehouse management monitor
- Use the RF framework to create and process indirect labor tasks

## Unit Contents

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# Lesson: Overview, Activation, and Master Data

## Lesson Overview

In addition to a brief review of Labor Management, this lesson will review the process of activation that is required to “turn on” labor management. This lesson will also cover processor master data required by Labor Management.

## Lesson Objectives

After completing this lesson, you will be able to:

- Describe the features and functions of Labor Management.
- Activate Labor Management
- Explain the role of the processor master data and create processor master data in EWM

## Business Example

You are going to implement the EWM Labor Management function in your warehouse. It is important that you know the basic functions, activation, and master data requirements of Labor Management.

## Overview

Labor Management provides a series of functions to help Warehouse Management plan labor times and resources more effectively, thereby making the warehouse more productive. These functions are used to measure, plan, simulate, and visualize the activities in the warehouse.

Using engineered labor standards (ELS) in Labor Management, a comparison and evaluation of the performance of warehouse employees can be performed. After planned work is executed in the warehouse, a comparison can be made of the planned versus the actual times. This information can be used to trigger incentives such as bonus payments to warehouse employees. Labor Management has the ability to be connected to an external HR system.

Labor Management is service-oriented and uses measurement services in the planning process. It supports processes such as analytical functions by providing BI Content for EWM. This content can be used for long-term strategic planning in addition to the short-term operational planning that can be used in EWM through the planning and simulation functions of Labor Management. Short-term operational planning can be used to provide calculated planning goals, based on the workload, number of warehouse resources and the calculated measurement service.

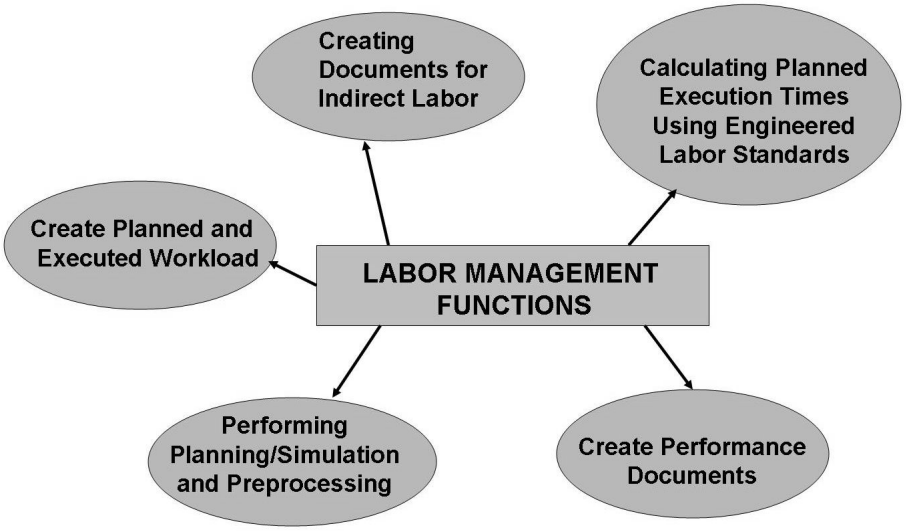



**Figure 5: Labor Management Functions**

### Functions

The functions specific to Labor Management are:

- Creating planned and executed workload
- Creating performance documents for employees and connecting an HR system
- Performing planning / simulation and preprocessing
- Creating documents for indirect labor tasks
- Calculating planned execution times using engineered labor standards

## Planned and Executed Workload

The system creates automatically for each external process step and activity area a document for the **planned workload**. You use this document as a basis for planning your resources. After performing the work, you can use the **executed workload** to compare the planned and actual durations. You can forward the result of your evaluation to an HR system, using performance document, to trigger payment of a bonus, for example. Each task in the warehouse has a certain workload. You can only plan this workload if the scope of the task involved is fixed, for example, if a warehouse order that has various warehouse tasks has been created. After executing the work, additional data is then available, such as which worker executed the work, the exact start and finish time, and the resources used.

In the executed workload, you can compare the planned and actual duration for:

- Warehouse orders
- Value-added service orders
- Quality inspection documents
- Physical inventory documents
- Indirect labor

You can use the information contained within the planned workload document to make strategic decisions. For example, this enables you to use the total of all planned activities in a particular activity area, on a particular day, to plan the number of employees for this day, in this activity area. In a similar way, you can use the information in the executed workload to compare the performance of individual employees and groups, and to forward this data to a connected HR system to trigger payment of a bonus, for example. To do this, you must create a performance document for an employee for a particular evaluation process.

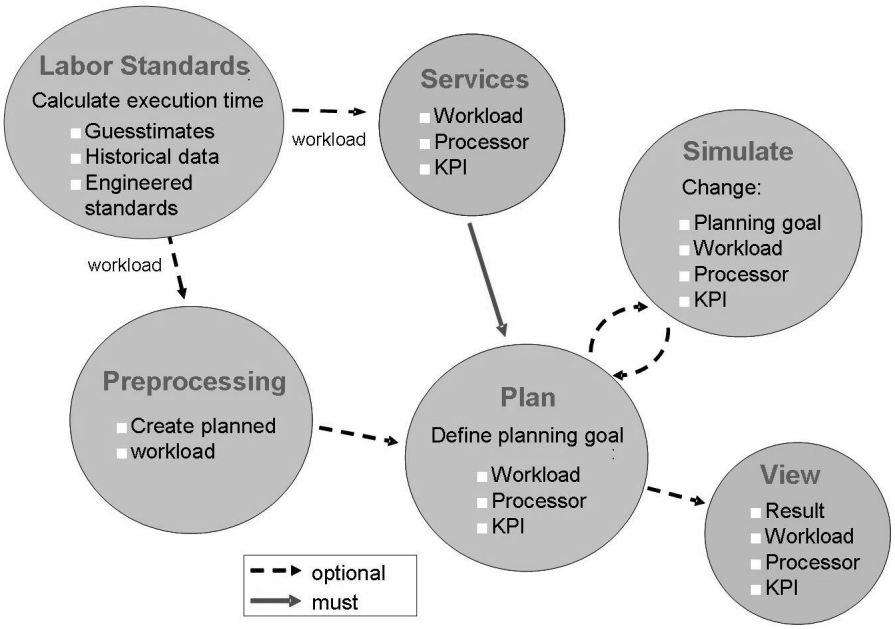



**Figure 6: Labor Management Planning**

### External Process Step

Since you control Labor Management using external process steps, each document or document item must have an external process step assigned to it. The assignment depends on the document:

**Warehouse Orders Using Storage Control**

For warehouse tasks for storage control, the external process step is determined from the profile in the storage control.

For each step defined in the profile, the system creates a data record for the planned workload, even if no document exists yet for this step. Exceptions to this are optional steps, such as deconsolidation. In this instance, the system only generates the workload records when it is clear that the step is also performed. For the steps in the storage control profile for which a document is created, the planned workload record of the storage control is deleted, and a planned workload record is created for the document, as this contains more precise information.

**Other Warehouse Orders**

For warehouse orders for warehouse tasks that were not created through storage control, or for physical inventory warehouse orders, the **external process step is determined using the activity**.

You can assign an external process step to an activity in Customizing for EWM. In the Implementation Guide (IMG) for EWM, choose *Labor Management → Define Activities*.

You define new process steps in Customizing for EWM under *Labor Management → Define External Process Steps*. For the internal process step, you can select **NSCT** for movements that are not storage-control-relevant, or **INVE** for physical inventory, for example.

**Quality Management (QM)**

For the workload for inspection documents, the system takes the external process step of the document itself. For this, you have to specify an external process step for the inspection document in the inspection rule. For subordinate elements of the inspection document, the external process step of the inspection document is relevant. This does not apply if an external process step is assigned to the element using a sample-drawing instruction.

**Value-Added Service Orders (VAS Orders)**

For VAS orders, you can configure an external process step for each activity. You maintain this in the packaging specification of the VAS order.

**Indirect Labor**

The system does not create planned workload for indirect labor; it only creates executed workload.

**Planned Workload**

The data record for the planned workload contains information about the location of the work and the type, quantity, duration, and capacity.

The data record also contains a link to the general document in the form of an object reference, such as a link to the QM document or warehouse order. You can use the data of all planned workload records in planning and simulation. The

data for the **planned execution duration** is calculated using the engineered labor standards. For warehouse orders, the travel distance or travel time can also be included in this calculation.

As soon as the work has been executed, the system creates a data record for the executed workload and deletes the data record for the planned workload.

**Executed Workload**

This central document contains all Labor-Management-relevant data that you can use to compare the planned and actual times objectively. While the work is being executed, the system or user records the name of the processor and the start and end time, for example. In addition to the data of the planned workload, the system also stores the used resource. A deviation from the planned duration is possible, for example, if:

- Resource types have different speeds.
- A difference quantity results from the order.
- Exceptions were triggered (exception handling).

After completing the activity, the system stores the executed workload. The system automatically deletes the data record for the planned workload. If you confirm a reference document that generates an executed workload, it is given the status *Valid*. If you change a record that has the status *Valid* in the warehouse management monitor, the system only sets the status of this record to *Invalid*. It writes a new record containing the changes and status *Valid*. The changed record of the executed workload is marked as *manually corrected*.

**Preprocessing**

Preprocessing gives you an overview of the workload that arises at a particular time for inbound and outbound deliveries, or in the physical inventory, for cycle counting. In terms of time, this determination comes before the execution, meaning before you create warehouse tasks and warehouse orders for delivery items, or for cycle-counting documents. You can use the result, for example, when planning employees for a particular activity area of for a particular process step. For planning, you define planning goals for your process steps in the formula editor. **The result of the preprocessing is only used for planning purposes**; it does not affect the actual execution.

Preprocessing is part of the **planning and simulation** function.

**Operational Planning**

You use this function to define calculated planning goals based on the workload, processors, and a calculated measurement service (CMS). You create the planning formula in the formula editor. A planning formula is valid for one warehouse number and external process step, and is intended for calculating the number of required employees based on the planned workload, for example.

The planning is based on:

- The calculated measurement service (CMS)
- Aggregated information:
  - Planned workload
  - Planned workload that you created using preprocessing
  - Information about the processors

**Employee Performance**

You can use this function together with information in the performance document and in the executed workload (EWL) assigned to the performance document to calculate, save, and forward performance-related amounts to a connected HR system. If you have connected the EWM system to an SAP ERP HR system (4.6C or higher), you can transfer the performance document amount to the HR system as an external wage component.

A **performance document** enables you to perform an employee-related evaluation of the EWLsfor a chosen time period. It contains the cumulative planned and actual execution durations of the assigned EWL, and the labor time of the employee, and therefore enables you to draw conclusions about the performance or utilization of the employee. You create a performance document for a processor.

## Labor Management (LM) in the Warehouse Management Monitor

The processor, warehouse manager, or group leader can use this function to display all LM-relevant information in the warehouse management monitor. For example, you can evaluate the efficiency of your employees, or the weight that was moved in a particular activity area in one day. The following nodes are defined:

- *Planned workload*

  The planned workload reflects the work expected in the warehouse. Each data record references an open object that is still to be processed, such as an open warehouse task. You can use the planned workload to perform planning in your warehouse.

- *Executed workload*

  The executed workload reflects the completed work in your warehouse. Each data record references a completed object, such as confirmed warehouse tasks.

- *Labor utilization*

  Labor utilization is the aggregated view of the executed workload. You can use the *Efficiency* to evaluate the performance of your employees. Under *Utilization*, you can use the actual data comparison, direct an indirect labor, and attendance of the processor to evaluate the performance of the processor.

- *Indirect labor tasks*

## Labor Management Activation

To use Labor Management in EWM, it has to be activated for use. You set the activation in Customizing.

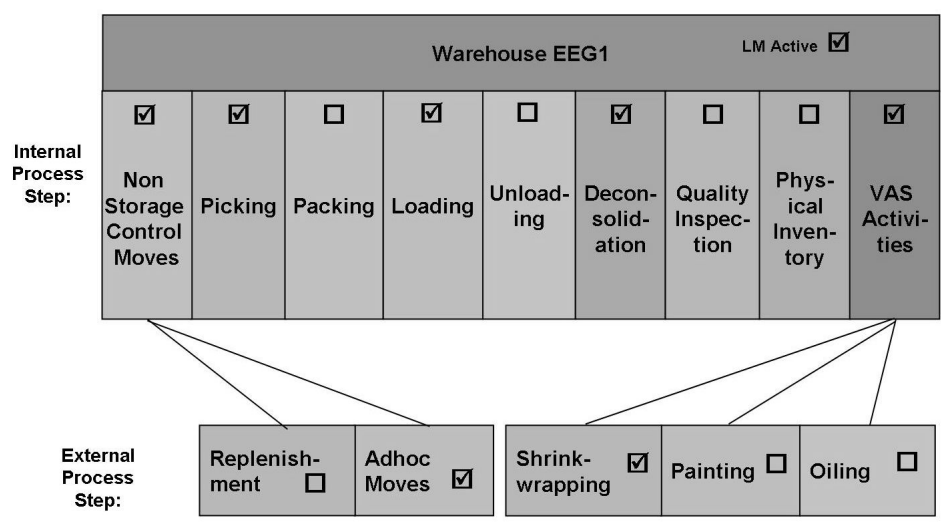



**Figure 7: Labor Management Activation**

You activate Labor Management for:

- A warehouse number
- Internal process steps

External process steps are defined with reference to internal process steps. If various external process steps are assigned to the same internal process step, they are all activated through the single activation of the internal process step. You can then deactivate individual external process steps for your warehouse.

If no entry exists in the table for activating internal process steps, the internal process step and all the external process steps assigned to it are inactive.

You activate Labor Management in Customizing for EWM. In the Implementation Guide for EWM, choose *Labor Management → Activate Labor Management*.

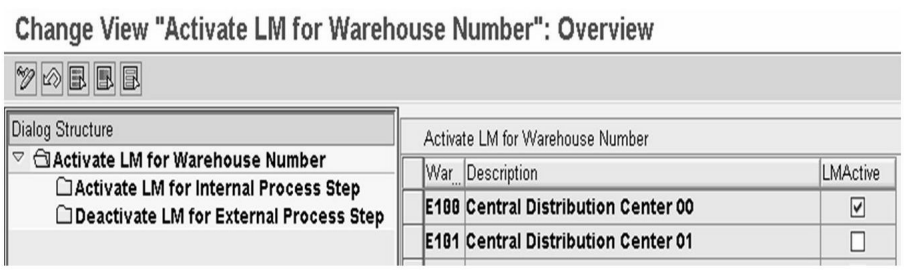



**Figure 8: Labor Management – Warehouse Activation**

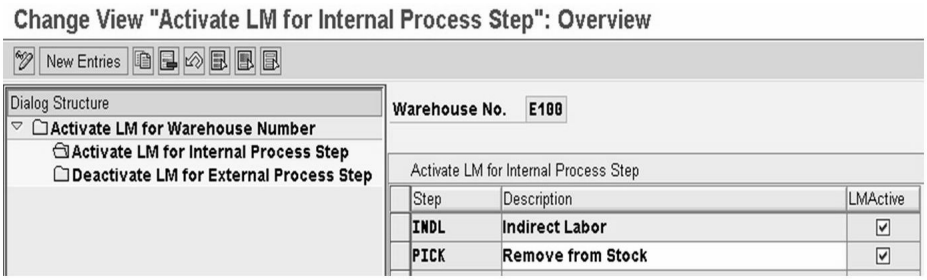



**Figure 9: Labor Management Internal Process Activation**

1. You activate Labor Management for a warehouse number.
2. You activate Labor Management for internal process steps. In doing so, you simultaneously activate all external process steps assigned to the individual, active, internal process steps.
3. You deactivate those external process steps that are not to be active for Labor Management.
4. You must create processor records in resource management for all relevant warehouse employees.

**Example**

LM is active for:

- Warehouse number E100
- For non-storage control moves, picking, loading, deconsolidation, and VAS activities

LM is inactive for all other internal process steps. For warehouse-internal movements and VAS activities, a more finely tuned control exists at external process step level. Labor Management can also be deactivated for external process steps. LM is not active for the steps shrink-wrapping and ad-hoc moves, but all other external process steps are active. The figure “Labor Management Activation” shows the levels at which LM is active and inactive.

After LM is activated, certain processing transactions will require that a processor, and the start and end times will have to be entered. The transactions affected are:

- Warehouse order confirmation
- Physical inventory processing and counting
- VAS processing transactions
- Quality-management-related transactions
- In work center related transactions, the end times will be determined automatically from the warehouse time if not entered manually.
- In RF, start and end times will be determined automatically
- In RF and work center transactions the processor will be determined through the system user.

## Master Data: Processor

In addition to the data already provided in EWM, Labor Management requires you to use **processor** master data. A processor is a person who operations a vehicle or other resource. The processor includes skills (licenses) and is a resource driver or a warehouse employee.

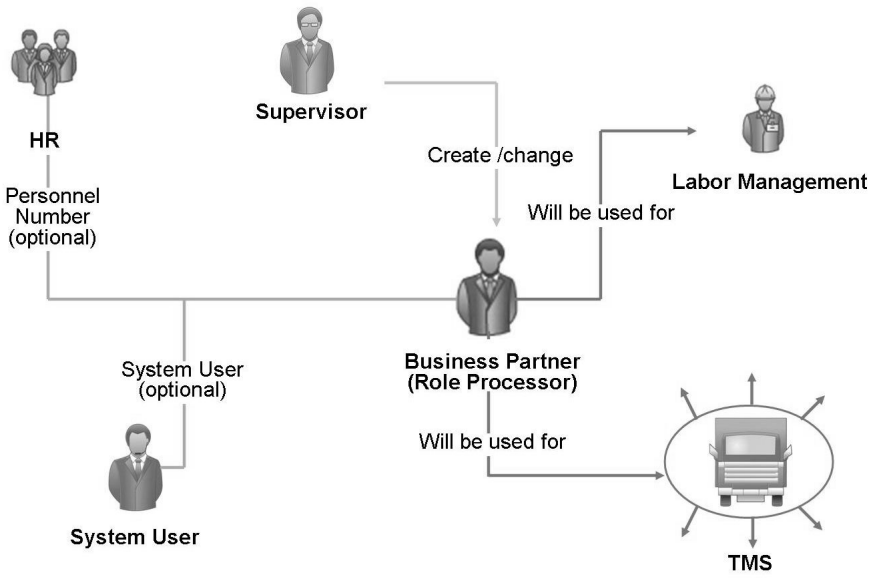



**Figure 10: Labor Management Processor Roles**

The processor is defined as a business partner with role **Processor (LM001)**. Along with address data and assignment, the user-name of the processor must be entered, You must also specify in which warehouse a resource works, and which processes they support. A **labor factor** can also be entered to specify a labor rate for a worker. This could be a standard or actual amount. You can also define (by selecting relationships) whether a processor is a member of a group, or group leader.

Utilizing the business partner allows us to use the processor role in other applications. The processor record is entered once, and is then available to Labor Management, as well as to additional applications. Information related to processors can also be viewed in the warehouse monitor.

The EWM transaction to enter and maintain processors is located at: *SAP menu → Extended Warehouse Management → Master Data → Resource Management → Processor → /SCMB/PRR1 - Create Processor*.

Enter at least *First* and *Last Name* on the *Address* tab.


**Figure 11: Processor – Address**

On the *Identification* tab, enter the person's system user ID.

Assign the process steps relevant for this processor. You can indicate the efficiency of a worker if the efficiency is not 100%.

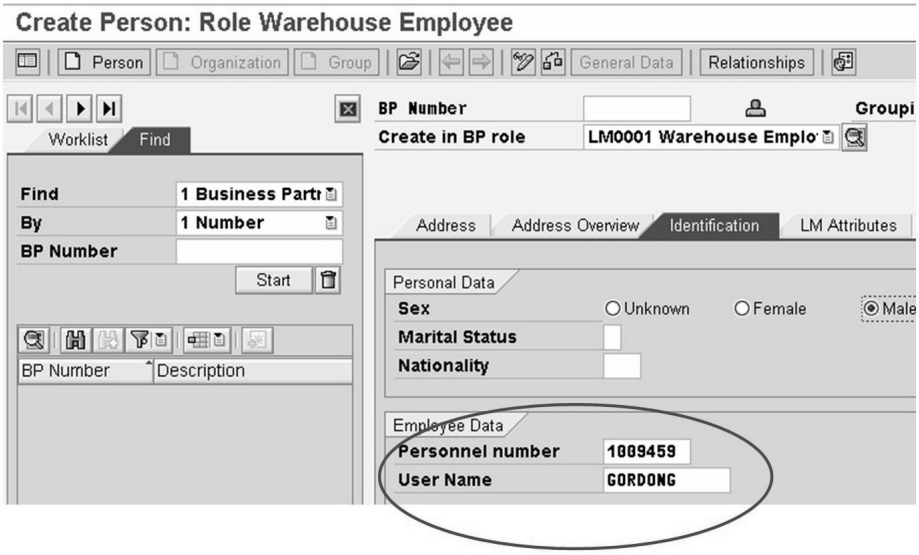



**Figure 12: Processor – Identification**

In the *Attributes* section of this tab, you can also enter a labor rate for the processor.

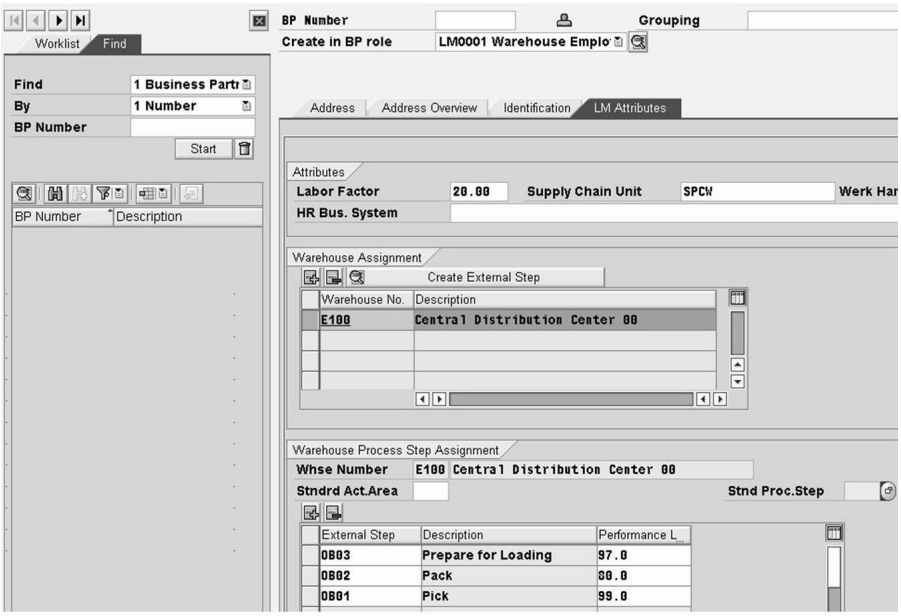



**Figure 13: Processor – Attributes**

# Exercise 2: Activate Labor Management and Create Processor

## Exercise Objectives

After completing this exercise, you will be able to:

- Activate Labor Management
- Create a processor record

## Business Example

Your customer has elected to implement SAP EWM Labor Management. You need to activate Labor Management and create a processor master record.

## Task:

Activate Labor Management and create a processor.

1. Activate Labor Management in warehouse **E1##** for the internal process steps **INDL** and **PICK**.
2. Create a processor record with the listed details in EWM.

| | |
|---|---|
| First Name | **your choice** |
| Last Name | **your choice** |
| Search Term 1/2 | **GR##** |
| Street/House Number | **Haupstrasse / 123** |
| Postal Code/City | **69190 / Walldorf** |
| Country | **DE** |
| User Name | **EWM110-##** |
| Supply Chain Unit | **SPCW** |
| Warehouse Number | **E1##** |
| External Steps | **OB01, OB02, OB03, OB04, PILM, CLLM** |

# Solution 2: Activate Labor Management and Create Processor

## Task:

Activate Labor Management and create a processor.

1. Activate Labor Management in warehouse **E1##** for the internal process steps **INDL** and **PICK**.

   a) In the SCM IMG, choose *Extended Warehouse Management → Labor Management → Activate Labor Management*.

   b) Set the *LMActive* indicator for your warehouse **E1##**.

   c) Select the line with warehouse **E1##** and double-click the *Activate LM for Internal Process Step* folder from the dialog structure.

   d) Verify, and if necessary, set the *LMActive* checkboxes for the two process steps, **INDL** and **PICK**.

   e) Double-click on the *Deactivate LM for External Process Step.* folder.

   f) There should not be any entries in this table.

   g) Choose *Save*  .

   h) Choose *Exit*  .

2. Create a processor record with the listed details in EWM.

| | |
|---|---|
| First Name | **your choice** |
| Last Name | **your choice** |
| Search Term 1/2 | **GR##** |
| Street/House Number | **Haupstrasse / 123** |
| Postal Code/City | **69190 / Walldorf** |
| Country | **DE** |
| User Name | **EWM110-##** |
| Supply Chain Unit | **SPCW** |
| Warehouse Number | **E1##** |
| External Steps | **OB01, OB02, OB03, OB04, PILM, CLLM** |

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management → Master Data → Resource Management → Processor → Create Processor*.

*Continued on next page*

b) In the *Address* tab, enter the following data:

| | |
|---|---|
| *First Name* | **your choice** |
| *Last Name* | **your choice** |
| *Search Term 1/2* | **GR##** |
| *Street/House Number* | **Haupstrasse / 123** |
| *Postal Code/City* | **69190 / Walldorf** |
| *Country* | **DE** |

c) Choose the *Identification* tab.

**Note:** If a dialog appears, **Address Entry Was Not Unique**, choose the *Ignore* button.

Enter the following:

| | |
|---|---|
| *User Name* | **EWM110-##** |

d) Choose the *LM Attributes* tab. Enter the following:

| | |
|---|---|
| *Supply Chain Unit* | **SPCW** |
| *Warehouse Number* | **E1##** |

Choose *Enter*.

e) In the *Warehouse Assignment* section, assign the process steps relevant for the processor. Select the warehouse number line containing the E1## warehouse.

f) Choose *Create External Step*. This will open the *External Step* entry in the *Warehouse Process Step Assignment* section below.

g) Enter the following external steps. Choose *Insert Row* after entering each external step except the last one.

| External Steps |
|---|
| **OB01** |
| **OB02** |
| **OB03** |
| **OB04** |
| **PILM** |

*Continued on next page*

| CLLM |
|---|

**Note:** For each external step there is a *Performance Level* that allows you to indicate the efficiency of a worker if the efficiency is not 100%. If you have a new worker who is operating at 50% efficiency while learning, this can be taken into account for planning purposes.

h)

**Note:** In the *Attributes* section of this tab, you can enter a *Labor Factor* for the processor. This can be a standard labor rate for the employee, which can then be used in conjunction with a BAdI.

i) Choose *Save*.

j) Note the *Processor Number*:

| *Processor Number* | |
|---|---|

k) Choose *Exit*.

## Lesson Summary

You should now be able to:

- Describe the features and functions of Labor Management.
- Activate Labor Management
- Explain the role of the processor master data and create processor master data in EWM

### Related Information

- For more information, visit http://help.sap.com. Choose *SAP Business Suite → SAP Extended Warehouse Management*.

# Lesson: Basic Process Configuration

## Lesson Overview

In this lesson you will learn how to configure Labor-Management-related processes.

## Lesson Objectives

After completing this lesson, you will be able to:

- Configure external steps and activities for Labor Management
- Configure preprocessing

## Business Example

Your company has elected to implement the Labor Management function in EWM. You need to understand how to configure Labor Management using process-oriented storage control.

## Basic Process Configuration

**Define external process steps**: You must define external process steps and assign them to internal process steps. The internal process steps are predefined by SAP; examples for available internal process steps are:

CNT: Count

INVE: Physical inventory

PICK: Remove from stock

UNLO: Unload.





Change View "External Storage Process Step": Overview

New Entries | BC Set: Change Field Values

External Storage Process Step

| External Step | Description | Int. Process Step | Direction |
|---|---|---|---|
| CL00 | Cleaning Group 00 | INDL | 3 Not Relevant for Proces |
| CLLM | Cleaning -- Labor Management | INDL | 3 Not Relevant for Proces |
| CNT | Count | CNT | Putaway |
| IB01 | Unload | UNLO | Putaway |
| IB02 | Deconsolidate | SPR | Putaway |
| IB03 | Put Away | PUT | Putaway |
| OB01 | Pick | PICK | 1 Stock Removal |
| OB02 | Pack | PAC | 2 Putaway and Stock Remov |
| OB03 | Prepare for Loading | STAG | 1 Stock Removal |
| OB04 | Load | LOAD | 1 Stock Removal |
| PI00 | Picking Group 00 | PICK | 1 Stock Removal |
| PILM | Pick with Labor Management | PICK | 1 Stock Removal |
| QIS | Quality Inspection | QIS | Putaway |
| VS01 | VAS Oil | VAS | 2 Putaway and Stock Remov |
| VS02 | VAS Pack | VAS | 2 Putaway and Stock Remov |
| VSKS | Kit Creation and Reverse Kitting | VAS | 2 Putaway and Stock Remov |
| VSPK | Pack with VAS order | VAS | 2 Putaway and Stock Remov |

**Figure 14: External Storage Process Steps**

**Define activities for your warehouse**: You must assign a **warehouse process category** (like Putaway, Stock Removal, or Physical Inventory) to each activity to classify the individual movements.

Change View "Define Activity": Overview

New Entries | BC Set: Change Field Values

Define Activity

| War... | Activity | Description | C | Pro... |
|---|---|---|---|---|
| E100 | CLSP | Cross-Line Stock Putaway | 8 | |
| E100 | INTL | Internal Movement | 3 | |
| E100 | INVE | Physical Inventory | 4 | |
| E100 | NOLM | Internal Movement Without Workload | 3 | |
| E100 | PI00 | Picking For Group 00 | 2 | PI00 |
| E100 | PICK | Stock Removal | 2 | |
| E100 | PILM | Picking with Labor Management | 2 | PILM |
| E100 | PTWY | Putaway | 1 | |
| E100 | REPL | Replenishment | 3 | |
| E100 | STCH | Posting Change | 7 | |

**Figure 15: Define Activity**

**Assign planning activity areas**: In this activity, you determine the activity area for planning in Labor Management if the system cannot find any other activity area when creating the planned workload.

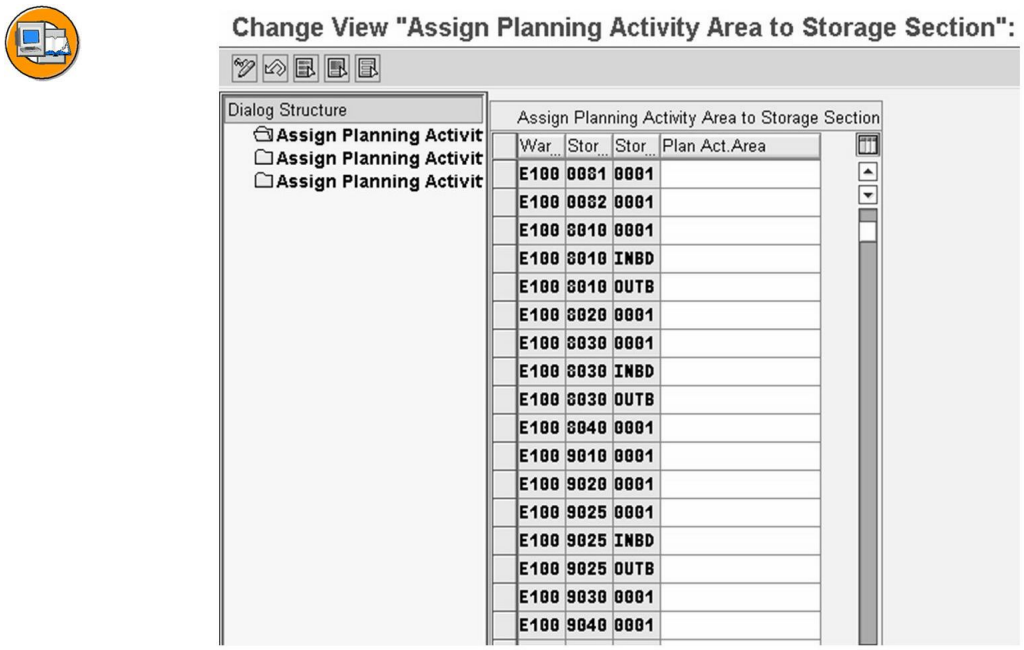



**Figure 16: Assign Planning Activity Areas**

You use **preprocessing** to determine the workload for inbound and outbound deliveries for which no documents such as warehouse tasks exist yet. The determined workload is used for planning in Labor Management only. There is no link to execution in the warehouse.

If you plan to use preprocessing, your first need to **Define Delivery Date/Time for Preprocessing**. Assign a date/time type to document categories Inbound Delivery and Outbound Delivery, which the system then uses for preprocessing.

Then it is necessary to **Set Preprocessing**.

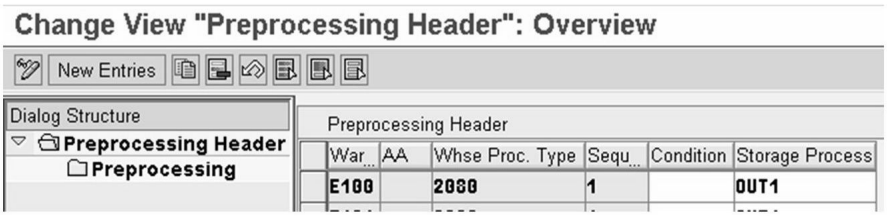



**Figure 17: Preprocessing Header**

1. Define an entry for the preprocessing header.

   You can use the warehouse number, an activity area, or a warehouse process type as a key. When determining preprocessing, the system then selects deliveries with these attributes.

   You can also assign a condition and a storage process to the preprocessing header. The storage process is used to determine the process steps that are relevant for the delivery in the warehouse. You can define the condition in the condition editor. It is used to find different storage processes for special attributes of the delivery items. In this way, for example, you can differentiate between substances that are hazardous and non-hazardous.

2. If you have created an entry for the preprocessing header, you can create dependent entries for the preprocessing item. Each entry corresponds to a step that will take place in the warehouse for the selected storage process. You are free to combine these steps in any way you choose.

   You can specify an activity area in which the workload will come about.

   You can also control the amount of workload that is generated. Here, you specify a percentage, which is offset with the determined workload. You can use a condition at this level to check special attributes again, such as defined maximum weight.

   Finally, you can specify duration for a process step. This duration is later used to determine when a process step occurs in delivery processing.

**Preprocessing with Assistant**

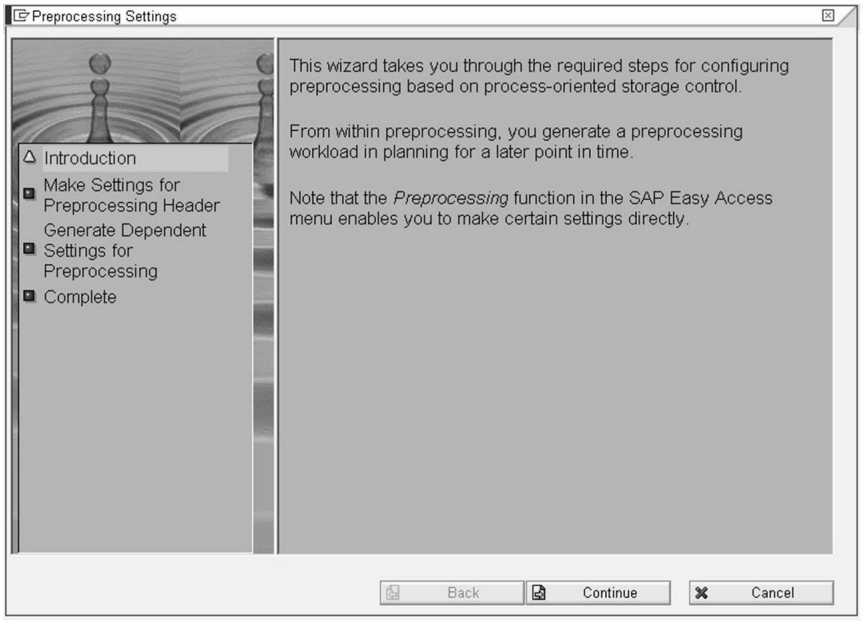



**Figure 18: Preprocessing with Assistant**

Like in some other functions in EWM, you can define settings for preprocessing with the help of the system. The advantage of this is that the system reads and suggests all process steps for the preprocessing item from the storage process specified in the preprocessing header. This enables you to configure preprocessing analogously to the storage processes without great amount of effort.

# Exercise 3: Configure Labor Management

## Exercise Objectives

After completing this exercise, you will be able to:

- Define activities
- Define warehouse process type indicators
- Define external process steps
- Define warehouse process types
- Configure automatic determination of warehouse process types
- Assign external process step to activity

## Business Example

Your customer has elected to implement SAP EWM Labor Management. You need to configure picking to be an activity that requires Labor Management for tracking employee performance. Additionally, you will configure an indirect labor activity for cleaning.

## Task 1:

Define a new activity for Labor Management.

1. Define the activity **PI##** for picking with Labor Management.
2. Assign the new LM activity to the activity areas within your warehouse where LM managed picking will take place. Create the appropriate entries based on the specifications below.

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0030** |
| Activity | **PI##** |
| Sequence Number | 1 |
| Storage Type | **0030** |
| Sort Sequence | **None** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0020** |
| Activity | **PI##** |

*Continued on next page*

| | |
|---|---|
| Sequence Number | 1 |
| Storage Type | **0020** |
| Sort Sequence | **None** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0010** |
| Activity | **PI##** |
| Sequence Number | 1 |
| Storage Type | **0010** |
| Sort Sequence | **None** |

3. Perform the required bin sorting for your activities. Use the data from the table below.

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0030** |
| Activity | **PI##** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0020** |
| Activity | **PI##** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0010** |
| Activity | **PI##** |

4. Define a *Warehouse Process Type Indicator* for Labor Management.
5. Define external process steps. Here you will create the process steps for picking, PI##, and indirect labor, CL##.
6. Define the warehouse process type that will be used for picking with Labor Management. In this step, you will copy the warehouse process type 2010 to the warehouse process type PILM. Use the data in the table below to create your new warehouse process type.

*Continued on next page*

| | |
|---|---|
| **Warehouse No.** | **E1##** |
| **Whse Proc. Type** | **PILM** |
| **Description** | **Stock Removal with LM - Group ##** |
| **Activity** | **PI##** |

7. Configure automatic determination of the new LM picking warehouse process type, PILM.
8. Specify the storage type search sequence for stock removal.
9. Assign external process step to activity.

## Task 2:

Set the Labor Management process control indicator, 70, on product T-EW04-##. You will use this product master to test your new Labor Management picking process.

| | |
|---|---|
| Product | **T-EW04-##** |
| Warehouse Number | **E1##** |
| Party Entitled to Dispose | **SPCW** |
| Proc. Type Det. Ind. | **70** |

1. Update the warehouse product master for the product in the table above with the LM process type determination indicator.
2. Add your LM warehouse process type to queue determination so that all warehouse orders created for your LM WPT, PILM, will be assigned to queue OUTBOUND.

| | |
|---|---|
| Warehouse Number | **E1##** |
| Warehouse process Type | **PILM** |
| Queue | **OUTBOUND** |

## Task 3:

Test your new LM picking process by creating a delivery document without reference in the ERP system and processing the outbound delivery order through picking in the EWM system. Use the data in the table below.

1. Create an outbound delivery in the ERP system.
2. View the outbound delivery in EWM.

*Continued on next page*

| | |
|---|---|
| **Outbound delivery order** | |
| **Warehouse process type** | |
| **Warehouse order** | |
| **Warehouse task** | |

3. Create the picking task from the outbound delivery order.
4. Confirm the LM picking task.

## Task 4:

Check the Labor Management executed workload in the warehouse monitor for your processor number.

1. Check your LM executed workload.


For internal use by CSC only

# Solution 3: Configure Labor Management

## Task 1:

Define a new activity for Labor Management.

1. Define the activity **PI##** for picking with Labor Management.
   a) In the SCM IMG, choose *Extended Warehouse Management → Labor Management → Define Activities*.
   b) Choose *New Entries* and enter the following:

| | |
|---|---|
| *Warehouse No.* | **E1##** |
| *Activity* | **PI##** |
| *Description* | **Picking with LM - Group ##** |
| *Process Cat.* | **2 Stock Removal** |

   c) Choose *Save*.
   d) Choose *Exit*.
2. Assign the new LM activity to the activity areas within your warehouse where LM managed picking will take place. Create the appropriate entries based on the specifications below.

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0030** |
| Activity | **PI##** |
| Sequence Number | 1 |
| Storage Type | **0030** |
| Sort Sequence | **None** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0020** |
| Activity | **PI##** |
| Sequence Number | 1 |
| Storage Type | **0020** |
| Sort Sequence | **None** |

*Continued on next page*

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0010** |
| Activity | **PI##** |
| Sequence Number | 1 |
| Storage Type | **0010** |
| Sort Sequence | **None** |

a) In the SCM IMG, choose *Extended Warehouse Management → Master Data → Activity Areas → Define Sort Sequence for Activity Area*.

b) Choose *New Entries*.

c) Enter the data from the table entry above.

d) For entries 1 and 2 choose *Next Entry*  .

For the entry 3, choose *Save*  .

e) Repeat steps (c) and (d) for the second and third table.

f) Choose *Exit*  .

3. Perform the required bin sorting for your activities. Use the data from the table below.

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0030** |
| Activity | **PI##** |

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0020** |
| Activity | **PI##** |

*Continued on next page*

| | |
|---|---|
| Warehouse Number | **E1##** |
| Activity Area | **0010** |
| Activity | **PI##** |

a) In the *SCM SAP* menu, choose *Extended Warehouse Management → Master Data → Storage Bin → Sort Storage Bins*

b) Use the data from the three tables above to perform the bin sorting for the three activity areas and your new LM activity.

c) Enter the fields from the table.

d) Choose *Execute*

e) In the *Simulation of Bin Sorting* screen, choose *Execute*.

f) After the last activity area as been sorted, choose *Exit*.

4. Define a *Warehouse Process Type Indicator* for Labor Management.

a) In the SCM IMG, choose *Extended Warehouse Management → Cross-Process Settings → Warehouse Task → Define Control Indicators for Determining Warehouse Process Types*

b) Choose *New Entries* and enter the following:

| | |
|---|---|
| *Warehouse Number* | `E1##` |
| *ProTypeDet* | `70` |
| *Description* | `LM Indicator for Group ##` |

c) Choose *Save*.

d) Choose *Exit*.

*Continued on next page*

5. Define external process steps. Here you will create the process steps for picking, PI##, and indirect labor, CL##.

   a) In the SCM IMG, choose *Extended Warehouse Management → Cross-Process Settings → Warehouse Task → Define Process-Oriented Storage Control*.

   b) Choose *New Entries* and enter the following:

| ***External Step*** | **CL##** |
|---|---|
| ***Description*** | **Cleaning Group ##** |
| ***Int. Process Step*** | **INDL (Indirect labor)** |

| ***External Step*** | **PI##** |
|---|---|
| ***Description*** | **Pick with LM Group ##** |
| *Int. Process Step* | **PICK (Remove from Stock)** |

   c) Choose *Save*.

   d) Choose *Exit*.

6. Define the warehouse process type that will be used for picking with Labor Management. In this step, you will copy the warehouse process type 2010 to the warehouse process type PILM. Use the data in the table below to create your new warehouse process type.

*Continued on next page*

| | |
|---|---|
| **Warehouse No.** | **E1##** |
| **Whse Proc. Type** | **PILM** |
| **Description** | **Stock Removal with LM - Group ##** |
| **Activity** | **PI##** |

a) In the SCM IMG, choose *Extended Warehouse Management → Cross-Process Settings → Warehouse Task → Define Warehouse Process Type*.

b) Choose the *Position* button to locate warehouse process type **2010** in your warehouse, **E1##**.

c) Select the line.

d) Choose *Copy As*  .

e) Overwrite the warehouse process type with your new warehouse process type, PILM, from the table above.

f) Enter the new *Description* from the table above.

g) Enter the new LM activity in the *Activity* field.

h) **All other settings remain as they are.**

i) Choose *Enter*.

j) Choose Save  .

k) Choose *Exit*  .

7. Configure automatic determination of the new LM picking warehouse process type, PILM.

a) In the SCM IMG, choose *SCM IMG: Extended Warehouse Management → Cross-Process Settings → Warehouse Task → Determine Warehouse Process Type*.

b) Choose *New Entries* and enter the following:

| | |
|---|---|
| ***Warehouse No.*** | **E1##** |
| ***Doc. Type*** | **OUTB** |
| ***ProTypeDet*** | **70** |
| ***Whse Proc. Type*** | **PILM** |

c) Choose *Save*  .

d) Choose *Exit*  .

*Continued on next page*

8. Specify the storage type search sequence for stock removal.

   a) In the SCM IMG, choose *Extended Warehouse Management → Goods Issue Process → Strategies → Determine Storage Type Search Sequence for Stock Removal*.

   b) Choose *New Entries* and enter the following:

| | |
|---|---|
| ***Warehouse Number*** | **E1##** |
| ***Whse Process Type/Group*** | **PILM** |
| ***Storage Type Search Seq.*** | **PICK** |
| ***RemR*** | **FIFO** |

   c) Choose *Save*.

   d) Choose *Exit*.

9. Assign external process step to activity.

   a) In the SCM IMG, choose *Extended Warehouse Management → Labor Management → Define Activities*.

   b) For warehouse **E1##**, activity **PI##**, enter *Process Step* **PI##**

   **Note:** F4, *Possible Entries* , does not work for this field.

   c) Choose *Save*.

   d) Choose *Exit*.

*Continued on next page*

## Task 2:

Set the Labor Management process control indicator, 70, on product T-EW04-##. You will use this product master to test your new Labor Management picking process.

| | |
|---|---|
| Product | **T-EW04-##** |
| Warehouse Number | **E1##** |
| Party Entitled to Dispose | **SPCW** |
| Proc. Type Det. Ind. | **70** |

1. Update the warehouse product master for the product in the table above with the LM process type determination indicator.
   a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Master Data* → *Product* → *Maintain Warehouse Product*
   b) Enter the *Product Number*, the *Warehouse Number*, and the *Party Entitled to Dispose* from the table above in the corresponding fields on the screen.
   c) Choose *Change*.
   d) Select the *Whse Data* tab.
   e) Enter the *Proc. Type Det. Ind.* from the table above in the corresponding field on the screen.
   f) Choose *Save*  .
   g) Choose *Exit*  twice to leave the transaction.
2. Add your LM warehouse process type to queue determination so that all warehouse orders created for your LM WPT, PILM, will be assigned to queue OUTBOUND.

*Continued on next page*

| | |
|---|---|
| Warehouse Number | **E1##** |
| Warehouse process Type | **PILM** |
| Queue | **OUTBOUND** |

a) In the SCM IMG, choose *Extended Warehouse Management → Cross-Process Settings → Resource Management → Define Queues*.

b) In the *Activity* dialog, select *Define Queue Determination Criteria*.

c) Choose *New Entries*.

d) Enter the data fields from the table above in the corresponding fields in the queue assignment record.

e) Choose *Save*.

f) Choose *Exit*.

g) Choose *Cancel*.

*Continued on next page*

## Task 3:

Test your new LM picking process by creating a delivery document without reference in the ERP system and processing the outbound delivery order through picking in the EWM system. Use the data in the table below.

1. Create an outbound delivery in the ERP system.

   a) In the *ERP SAP* menu, choose *Logistics → Logistics Execution → Outbound Process → Goods Issue for Outbound Delivery → Outbound Delivery → Create → Single Document → Without Order Reference*.

   b) Create the outbound delivery using the following data:

| | |
|---|---|
| ***Shipping Point*** | **Z0##** |
| ***Delivery Type*** | **LO** |
| ***Sales Organization*** | **1000** |
| ***Distribution Channel*** | **10** |
| ***Division*** | **00** |
| ***Ship To Party*** | **T-E01A-##** |
| ***Planned GI Date*** | **Today's date** |
| ***Material*** | **T-EW04-##** |
| ***Delivery Quantity*** | **10** |
| ***Picking Tab: Plant*** | **SPCW** |
| ***Storage Location*** | **AF##** |

**Resulting outbound delivery document numbers:**

| | |
|---|---|
| **Outbound Delivery** | |

2. View the outbound delivery in EWM.

*Continued on next page*

| | |
|---|---|
| **Outbound delivery order** | |
| **Warehouse process type** | |
| **Warehouse order** | |
| **Warehouse task** | |

a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Delivery Processing* → *Outbound Delivery* → *Maintain Outbound Delivery Order*.

b) In the *Find* field, choose *ERP Document* as the search criteria. Enter the ERP delivery document number you recorded above in the *Find* field.

c) Choose *Perform Search*

d) Record the *Document Number* of the outbound delivery order in the table above.

3. Create the picking task from the outbound delivery order.

a) In the menu bar, choose *Outbound Delivery Order* → *Follow-On Functions* → *Warehouse Task*.

b) From the *Create Warehouse Task* screen, record the warehouse process type. It should be your new LM WPT.

c) Choose the *Create + Save* button.

d) The warehouse order number will be displayed in the *Status* line. Record the number in the table above.

e) Choose *Exit* two times.

*Continued on next page*

4. Confirm the LM picking task.

   a) From the *SCM SAP* menu, choose *Extended Warehouse Management → Execution → Confirm Warehouse Task*

   b) In the *Find* field, enter the warehouse order number that you created in the last step.

   c) Choose *Perform Search*.

   d) Check the *LM Active* field in the warehouse order line. Is it checked?

   _____

   e) Document the warehouse task in the table above.

   f) Choose *Switch to Form View* on the warehouse order line.

   g) Choose the *Start WO* button. The LM relevant fields will open for input.

   h) Enter the *Processor Number* that you created previously.

   i) Enter a *Confirm Date and Time*.

   **Note:** The date and time cannot be in the future. Wait a few minutes and enter the *Confirm Date* and *Time* accordingly.

   j) Choose *Confirm + Save*.

   k) Choose *Exit*.

*Continued on next page*

## Task 4:

Check the Labor Management executed workload in the warehouse monitor for your processor number.

1. Check your LM executed workload.

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Monitoring* → *Warehouse Management Monitor*.

   b) Open the *Labor Management* node.

   c) Double-click on *Executed Workload*.

   d) In the *Selection* dialog, enter your *Processor Number* in the corresponding field.

   e) Choose *Execute*  .

   f) Choose *List View->Form View*.

   g) Update the table below with the data from the corresponding fields in your executed workload record.

| | |
|---|---|
| Step | |
| Actual Dur. | |
| Full Name | |
| Direct Labor Duration | |
| Planned Duration | |

   h) Choose *Exit*.

## Lesson Summary

You should now be able to:

- Configure external steps and activities for Labor Management
- Configure preprocessing

### Related Information

- For more information, visit http://help.sap.com. Choose *Select SAP Business Suite→ SAP Extended Warehouse Management*.

# Lesson: Engineered Labor Standards

## Lesson Overview

The engineered labor standards (ELS) function is used to define the times that are required to execute individual activities in the warehouse. In this lesson, the basic configuration and ELS data creation techniques are explained. In addition, the use of the formula and condition editors will be covered.

## Lesson Objectives

After completing this lesson, you will be able to:

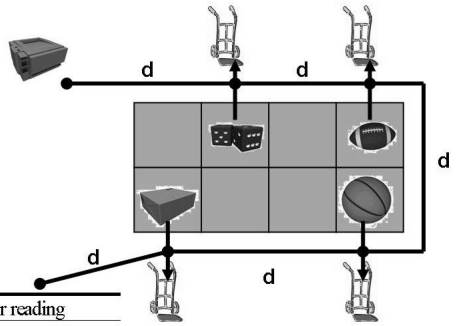
- Define the purpose of engineered labor standards
- Configure the use of ELS in EWM
- Use the formula and condition editors
- Explain the basic concepts and use of the travel distance calculation function.

## Business Example

To provide performance measurement reporting in your warehouse, you will use ELS data that has been created by your industrial engineering staff as the activity processing time standard to which you will compare your actual performance times.

## Engineered Labor Standards

The engineered labor standards (ELS) function is used to define the times that are required to execute an activity in the warehouse.




| | Time (s) | Reason |
|---|---|---|
| Read document | 5 | Constant time for reading |
| Walk to first bin | 15 | Travel time |
| Pick toy | 10 | Time for picking dependant on weight |
| Walk to next bin | 11 | Travel time |
| Pick toy | 20 | Time for picking dependant on weight |
| Walk to next bin | 13 | Travel time |
| Pick toy | 2 | Time for picking dependant on weight |
| Walk to next bin | 35 | Travel time |
| Pick carton | 8 | Time for picking dependant on weight |
| Walk to packing station | 60 | Travel time |
| Total time | 179 | |

**Figure 19: Example – Engineered Labor Standards**

The system calculates ELS when:

- Creating a document, when the system generates planned workload
- Confirming a document, when the system generates executed workload

The system saves the labor standards in the planned workload as planned duration, and in the executed workload as an adjusted planned duration. The final data is only available when you have confirmed the document, as only then is the executing resource known and therefore also the:

- Speed of the resource
- Last position of the resource prior to executing the activity
- Travel distance allowed for the resource

The system uses this additional data for the travel distance calculation. It saves the results of the travel distance calculation in the planned and executed workload. You can include a formula or condition as parameters when defining the engineered labor standards.

When calculating the planned time of the planned workload, the system estimates the following information:

- For the speed, the system uses the slowest resource (pessimistic approach).
- Instead of using the exact position of the resource, the system uses the default distance. The default distance is the distance traveled to reach the first item of a storage type.
- The route network, which contains all defined routes without resource type restrictions.

The calculated planned time is used for the following:

- Operational planning of the planned workload
- Evaluating employees by comparing the measured time with the planned time stored in the workload

**Prerequisites**

- You have activated Labor Management.
- You have defined formulas in the formula editor and conditions in the condition editor.
- You have defined engineered labor standards in Customizing for EWM by choosing *Labor Management → Determine Engineered Labor Standards*.

**Travel Distance Calculation**

The travel distance calculation calculates the travel distance that a warehouse worker must travel to execute a warehouse order. For this distance calculation different possibilities are available, either using **networks** or the **direct distance**.

Networks, which consists of edges and nodes, define the valid routes (streets) in the warehouse. There are two types of networks:

- Storage-type-specific networks, which you define for each storage type
- Global network that connects the storage-type-specific networks to each other

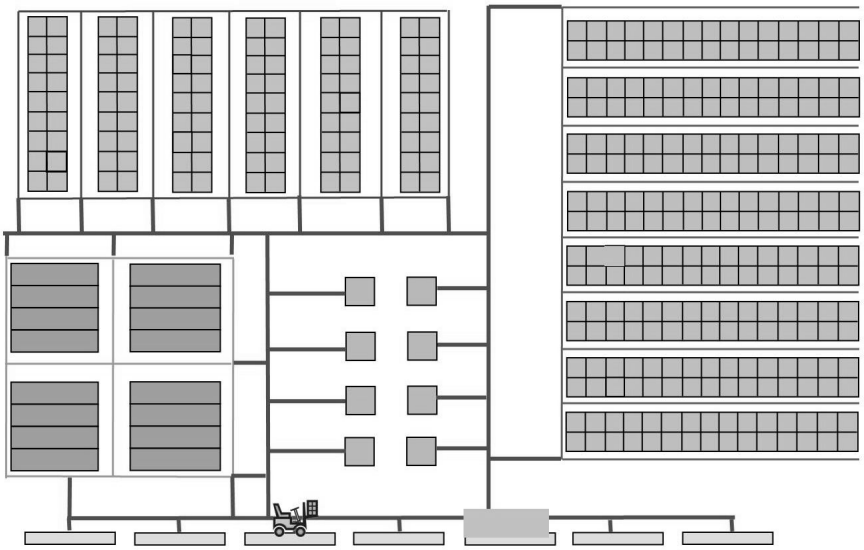
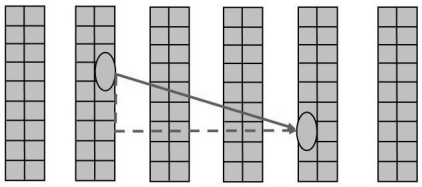


**Figure 20: Warehouse Network**

The networks can be created manually or programmatically.

If a network is not generated, the system uses one of two direct distance calculation techniques: the Euclidean or the Manhattan method, as illustrated below.

- **Use Euclidean or Manhattan metric to travel between bins if no network exists.**



- **The solid line corresponds to the Euclidean metric; the dotted line represents the Manhatting metric.**

**Figure 21: Manhattan and Euclidean Travel Distance Calculations**

The calculation of the shortest path within a network uses several heuristics:

- Use fast depth-first search to get first solution
- Use breadth-first search to improve first solution

In addition to calculating the travel distance, the system determines the time required by a worker to execute the warehouse order, depending on the speed of the resource used.

If Labor Management is activated, the system saves the result of the travel distance calculation in the planned and executed workload. The result of the travel distance calculation is used for:

- Planning the workers in Labor Management (LM)
- Calculating engineered labor standards (ELS)
- Calculating the latest start time for a warehouse order

**Configuration of Engineered Labor Standards**

You split an activity into work steps, which the warehouse worker must execute sequentially, and which make up a work step sequence. The planned time for the activity is then made up of the total of all planned times of the individual work steps in the work step sequence. The system uses a wildcard function to assign a work step sequence to an activity. You use either a constant or a formula to determine the planned time of a work step. You can make multiple entries for these, and use conditions to define the ones you want to use of the calculation. The fields that you use in the formulas and conditions are dependent on the object type for which you are defining engineered labor standards. This means, for example, that it is not possible to use product information to calculate the ELS of a warehouse order directly, as this may collect warehouse tasks that have different products.

## Example for Engineered Labor Standards

A warehouse manager has created a warehouse order with multiple warehouse tasks. One of the warehouse managers must fetch various toys and a cardboard box for packaging from the warehouse. The calculation of the planned time must consider the following:

- Individual withdrawal processes.
- Travel distances
- Constant time for reading the warehouse order

The following must apply for the calculation:

- The planned time of the warehouse order corresponds to the sum of the planned times of the warehouse tasks, travel time, and a constant.
- The planned time of a warehouse task must be independent of the product group (for example, toy, packaging).
- For a withdrawal process, the steps **turn**, **take**, and **put on resource** apply, whose times are partially constant. The step **take** depends on the weight.

The warehouse manager makes the following settings for the warehouse order:

- As a formula, he or she creates a sum with the following addends:
  - Planned time of workload (to use the planned times of the warehouse tasks)
  - Travel time
- He or she defines the two work steps:
  - **Read Document**, with a constant for the time calculation
  - **Execute Labor Tasks**, with the previously defined formula for the time calculation
- He or she defines the work step sequence, consisting of two work steps.
- He or she assigns the defined work step sequence to the following objects:
  - Warehouse number
  - External process step
  - Activity area
  - Object type **Warehouse Order for Warehouse Tasks**

He or she makes the following settings for the warehouse task:

- He or she creates a formula for the planned time calculation of work step **Take** as a product of the weight and a constant, such as 1 kg corresponds to 3 minutes of planned time.
- He or she defines the condition using the given product group **Toy**.
  - **Turn**, with a constant for the time calculation
  - **Take**, defined for the toys using the formula for the time calculation, and for the packaging using a constant. The defined condition controls the different calculation.
  - **Put on resource**, with a constant for the time calculation
- He or she defines the work step sequence, consisting of the three work steps.
- He or she assigns the defined work step sequence to the following objects:
  - Warehouse number
  - External process step
  - Activity area
  - Object type **Warehouse Task**

## Configuration Process and Steps

Activities for the ELS configuration are:

1. Define the required work steps.
2. Define the standard times of the work steps.
   - Engineered labor standards consist of a sequence of conditions. The system processes the individual sequence steps one after another. It uses the first engineered labor standard whose condition is “true.”
   - Define a constant with a unit or a formula for the engineered labor standards
3. Define work step sequences consisting of work steps or other work step sequences.
4. Active **one** assignment.

If a work step sequence consists of only one work step and only occurs in one active assignment, you can use the **Direct ELS Definition**. Here, you assign the ELS directly. The system generates the required work step and the work step sequence automatically.

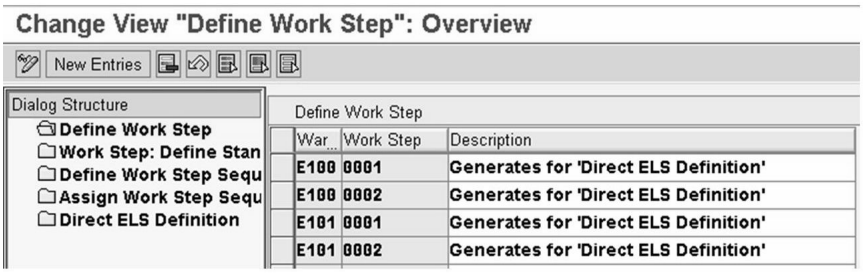



**Figure 22: Define Work Step**

# Exercise 4: Create Engineered Labor Standards

## Exercise Objectives

After completing this exercise, you will be able to:

- Define engineered labor standards

## Business Example

You want to define engineered labor standards for picking using the formula editor.

## Task 1:

Define engineered labor standards.

1. Define engineered labor standards for picking. Here you will create a condition record and a formula for picking, and enter the engineered labor standard incorporating the condition and formula you created. In this example you need to configure the following scenario: If a worker is carrying a load that is less than or equal 50 kg, then the ELS = 1.0. If the load is greater than 50 kg (condition) then you multiply the ELS * 1.2 (formula).
2. Enter the engineered labor standard with the new formula.

## Task 2:

Test the use of ELS and the ability of the system to compute employee efficiency. The ELS calculations will compute how much time a picking task should take (planned time), and the start and end times recorded automatically in the RF environment will allow the EWM system to calculate the actual time. The ratio of the actual to the estimated is the efficiency. The efficiency can be viewed in the RF environment.

Create an outbound delivery in the ERP system and process the delivery in the EWM system using the RF framework to confirm the picking warehouse order. You will then check your efficiency in the RF framework.

1. Create an outbound delivery in the ERP system.
2. Check the outbound delivery order in EWM and document the number.
3. Create the picking warehouse task from the outbound delivery order.

| **Warehouse Order** | |
|---|---|

*Continued on next page*

4. Assign your resource number to the task using the warehouse management monitor.

| | |
|---|---|
| Resource Number | **GR##** |

5. Process and confirm the warehouse order from the RF framework.
6. Use the *Employee Self Service* in the RF environment to see your picking efficiency.

## Task 3:

Review examples of the Labor Management data available in the warehouse management monitor.

1. Use the warehouse management monitor to display the Labor Utilization and Executed Workload data for your warehouse.
2. In the warehouse management monitor, review the executed workload data.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# Solution 4: Create Engineered Labor Standards

## Task 1:

Define engineered labor standards.

1. Define engineered labor standards for picking. Here you will create a condition record and a formula for picking, and enter the engineered labor standard incorporating the condition and formula you created. In this example you need to configure the following scenario: If a worker is carrying a load that is less than or equal 50 kg, then the ELS = 1.0. If the load is greater than 50 kg (condition) then you multiply the ELS * 1.2 (formula).

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management → Settings → Labor Management → Condition Editor*.

   b) If prompted, enter warehouse **E1##**.

   c) Select *Conditions for Engineered Labor Standards*.

   d) Choose *Create* 

   e) Enter the following:

| | |
|---|---|
| ***Condition*** | **CN##** |
| ***Description*** | **Weight > 50 KG** |
| ***Active*** | **Set this indicator** |

   f) In the field list, double-click on *A_WEIGHT*. It will be added to the formula window.

   g) Single-click on the *Greater Than* > button. It will be added to the formula window.

   h) Single-click on *Number* button.

   i) Enter the *Number* **50** in the pop-up dialog.

   j) Choose *Continue*  .

   k) Choose *Save*  .

   l) Choose *Exit*  .

   m) In the *SCM SAP* menu, choose *Extended Warehouse Management → Settings → Labor Management → Formula Editor*

   n) Select *Formulas for Engineered Labor Standards*.

*Continued on next page*





  

o) Choose *Create* .

p) Enter the following:

| | |
|---|---|
| ***Formula*** | **FM##** |
| ***Description*** | **Duration = Duration * 1.2** |
| ***Active*** | **Set this indicator** |

q) In the fields list, double-click on *A_PLDURA* (Planned Duration of a Workload Record). The field will display in the formula window.

r) Single-click on the *Multiplication function* * button.

s) Single-click on *Number* button.

t) In the pop-up dialog, enter the *Number* **1.2**.

u) Choose *Continue* .

v) Choose *Save* .

w) Choose *Exit* .

*Continued on next page*

2. Enter the engineered labor standard with the new formula.

   a) In the SCM IMG, choose *Extended Warehouse Management → Labor Management → Determine Engineered Labor Standards*.

   b) In the dialog structure, double-click on *Direct ELS Definition*.

   c) Choose *New Entries* and enter the following two entries:

| **Entry #1:** | |
|---|---|
| ***Whse No.*** | `E1##` |
| ***Step*** | `PI##` |
| ***Obj.-Typ*** | `A Warehouse Task` |
| ***Constant*** | `5` |
| ***Time Unit*** | `MIN` |
| ***Active*** | **Set this indicator** |

| **Entry # 2:** | |
|---|---|
| ***Whse No.*** | `E1##` |
| ***Step*** | `PI##` |
| ***Obj-Typ*** | `E Warehouse Order for Warehouse Task` |
| ***Condition*** | `CN##` |
| ***Formula*** | `FM##` |
| ***Active*** | **Set this indicator** |

   d) Choose *Save*.

   e) Choose *Exit*.

*Continued on next page*

## Task 2:

Test the use of ELS and the ability of the system to compute employee efficiency. The ELS calculations will compute how much time a picking task should take (planned time), and the start and end times recorded automatically in the RF environment will allow the EWM system to calculate the actual time. The ratio of the actual to the estimated is the efficiency. The efficiency can be viewed in the RF environment.

Create an outbound delivery in the ERP system and process the delivery in the EWM system using the RF framework to confirm the picking warehouse order. You will then check your efficiency in the RF framework.

1. Create an outbound delivery in the ERP system.

   a) In the *ERP SAP* menu, choose *Logistics → Logistics Execution → Outbound Process → Goods Issue for Outbound Delivery → Outbound Delivery → Create → Single Document → Without Order Reference*.

   b) In the ERP system, create the outbound delivery, without reference to sales order, using the following data:

| | |
|---|---|
| ***Shipping Point*** | **Z0##** |
| ***Delivery Type*** | **LO** |
| ***Sales Organization*** | **1000** |
| ***Distribution Channel*** | **10** |
| ***Division*** | **00** |
| ***Ship-To Party*** | **T-E01A-##** |
| ***Planned GI Date*** | **Today's date** |
| ***Material*** | **T-EW04-##** |
| ***Delivery Quantity*** | **160** |
| ***Picking Tab: Plant*** | **SPCW** |
| ***Storage Location*** | **AF##** |

**Resulting outbound delivery document number:**

| | |
|---|---|
| **Outbound Delivery** | |

*Continued on next page*

2. Check the outbound delivery order in EWM and document the number.

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Delivery Processing* → *Outbound Delivery* → *Maintain Outbound Delivery Order*.

   b) In the *Find* selection choose *ERP Document*.

   c) Enter your ERP delivery document number in the *Find* selection field.

   d) Choose *Perform Search*.

   e) Note the EWM ODO document number in the following table:

| **Outbound Delivery Order** | |
|---|---|

   f) Remain in the screen for the next exercise step.

3. Create the picking warehouse task from the outbound delivery order.

| **Warehouse Order** | |
|---|---|

   a) In the *Menu* bar, choose *Outbound Delivery Order* → *Follow-On Functions* → *Warehouse Task*.

   b) Choose the *Create* button.

   c) Choose *Message Log*.

   d) Scroll to the bottom of the log display and you should see the ELS calculation messages.

   e) Choose *Continue* to exit the log.

   f) Choose *Save*.

   g) The *Warehouse Order* number will be displayed in the *Status* line. Document it in the table above.

   h) Choose *Exit* two times to return to the menu.

4. Assign your resource number to the task using the warehouse management monitor.

*Continued on next page*

| Resource Number | **GR##** |
|---|---|

a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Monitoring* → *Warehouse management Monitor*.

b) Open the *Documents* node.

c) Double-click on *Warehouse Order*.

d) Enter the warehouse order number from the last step in the corresponding field in the selection dialog.

e) Choose *Execute*  .

f) From the *More Methods* icon, choose **Assign Rsrce**.

g) Enter your *Resource Number*, **GR##**, in the pop-up dialog.

h) Choose *Execute*  .

i) Choose *Exit*  .

*Continued on next page*

5. Process and confirm the warehouse order from the RF framework.

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management → Execution → Log On to RF Environment*.

   b) On the initial screen, choose *Enter* to go to the main menu.

   c) Choose *04 Outbound Processes → 01 Picking → 04 Picking by WO*.

   d) Enter the *Warehouse Order* number in the entry field.

   e) Choose *Enter*.

   f) On the next screen, with the *Pick HU* entry fields, choose function key **F4**, or the *F4 Next* button.

   g) In the next screen, the *Source (picking) Location* confirmation screen, enter the source bin that appears in the corresponding verification field. Choose *Enter*.

   h) In the *Srce-HU* verification field, choose *Enter*.

   i) In the *Prod.* verification field, enter the *Product Number* and choose *Enter*.

   j) In the *A Qty* field, enter the pick quantity that appears to the left. Choose *Enter*.

   k) Choose *Enter* in the *Dest HU* field.

   l) The next screen is the destination location confirmation screen. Enter **GI-ZONE** in the destination bin verification field. Choose *Enter*.

   m) Enter the product number in the corresponding verification field. Choose *Enter*.

   n) Enter the pick quantity in the *A Qty* field. Choose *Enter*.

   o) The warehouse order/task is confirmed.

   p) Choose the **F7** function key to go back to the main menu.

*Continued on next page*

  

6. Use the *Employee Self Service* in the RF environment to see your picking efficiency.

   a) From the RF main menu, choose *05 Internal Processes*.

   b) On the *Internal Processes* menu screen, choose the down (**v**) button to display additional menu entries.

   c) Choose *08 Labor Management*.

   d) Choose *02 Display Employee Self Service*.

   e) In the entry field, enter **1** to display data from today.

   f) Choose *Enter* two times.

   g) Note the *Efficiency %*.

   h) Choose function key **F7** two times, then the **F1** function key two times to log off of the RF framework.

## Task 3:

Review examples of the Labor Management data available in the warehouse management monitor.

1. Use the warehouse management monitor to display the Labor Utilization and Executed Workload data for your warehouse.

   a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Monitoring* → *Warehouse Management Monitor*.

   b) Open the *Labor Management* node.

   c) Open the *Labor Utilization* node.

   d) Double-click on *No Aggregation*. In the selection dialog, enter your processor number and choose *Execute* .

   e) Document the efficiency in the space below.

| **Efficiency %** | |
|---|---|

   f) Select the *Lab.Util.Det.* button. The system displays the detailed data used to compute the overall aggregated Labor Management information. Review this data.

   g) Close the *Labor Utilization* node.

*Continued on next page*

2. In the warehouse management monitor, review the executed workload data.

   a) Double-click on the *Executed Workload* node.

   b) Enter your *Processor* number in the *Processor* field in the selection dialog.

   c) Choose *Execute*  .

   d) Scroll through the executed workload document to familiarize yourself with the data stored within the document. Document the *Labor Management Activity Area* and *Actual Duration* below.

| | |
|---|---|
| **LM Activity Area** | |
| **Actual Duration** | |

   e) Choose *Exit*  .


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## Lesson Summary

You should now be able to:

- Define the purpose of engineered labor standards
- Configure the use of ELS in EWM
- Use the formula and condition editors
- Explain the basic concepts and use of the travel distance calculation function.

### Related Information

- For more information, visit http://help.sap.com. Choose *Select SAP Business Suite → SAP Extended Warehouse Management*.

# Lesson: Indirect Labor Tasks

## Lesson Overview

This lesson will present the basic concepts and configuration related to the recording of indirect labor tasks in the warehouse. Indirect labor tasks are tasks such as cleaning, sweeping, training, and meetings that are not directly involved with the central mission of a warehouse but that can take up significant periods of time.

## Lesson Objectives

After completing this lesson, you will be able to:

- Explain the features of indirect labor tasks.
- Create and record indirect labor tasks.
- Make the configuration settings related to indirect labor tasks.
- Select and evaluate indirect labor tasks using the warehouse management monitor
- Use the RF framework to create and process indirect labor tasks

## Business Example

You need to use the indirect labor task function to record the times for activities that are not directly related to the central warehouse activities of picking, putaway, replenishment, and rearrangement.

## Indirect Labor

You record indirect labor in the system using indirect labor tasks. For each indirect labor task confirmed, the system automatically creates a document for executed workload. This enables you to evaluate indirect labor tasks in the warehouse management monitor, and to create performance documents.

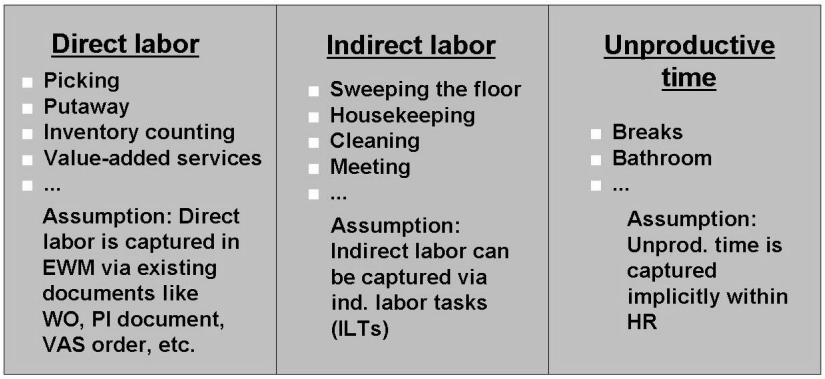


**Figure 23: Types of Warehouse Labor**

- You can use indirect labor documents to record indirect labor tasks such as *sweeping the floor*.
- The system stores indirect labor tasks in a single-level document.
- Customers can define external process steps for their indirect labor tasks, for example:
  - SWFL = Sweeping the floor
  - CLEA = Cleaning
  - MEET = Meeting
  - HSKP = Housekeeping
- Desktop and radio frequency (RF) transactions provided for recording labor
- Authorization concept on the basis of activity and processor/group differentiates between supervisor and warehouse worker

**Figure 24: Characteristics of Indirect Labor**

**Prerequisites**

1. You have activated order document management for indirect labor tasks in Customizing for EWM for each client. In the Implementation Guide (IMG) for EWM, choose *Labor Management → Activate Order Document Management for Indirect Labor Tasks*.
2. You have activated Labor Management at warehouse-number level and for internal process step **INDL** (indirect labor). You have also maintained external process steps for internal process step **INDL**, for example, **CLEN** for routine cleaning tasks, **MAIN** for maintenance tasks, or **MEET** for meetings.
3. In the business partner, you have created the processors for which you want to record indirect labor tasks. On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Master Data → Resource → Processor*.
4. If you are processing indirect labor tasks in the RF environment, you have defined the *User Name* field for the processor in the employee data on the *Identification* tab page. On the *SAP Easy Access* screen, choose *SCM Basis → Master Data → Resource → Processor*.
5. You have created a number range interval for indirect labor tasks. In the Implementation Guide (IMG) for EWM, choose *Labor Management → Determine Number Range for Indirect Labor*.
   - If you want to create indirect labor tasks for groups, you have to define an internal number range interval.
   - If you only want to use individual indirect labor tasks, you can also use an external number range interval.

**Features**

You call the function from the *SAP Easy Access* screen by choosing *Extended Warehouse Management → Labor Management → Maintain Indirect Labor Task*.

- You can use the enhanced search to make selections for one or more indirect labor tasks, such as for the warehouse number or the assignment key.
- You can create indirect labor tasks for groups, such as for team meetings or for individual processors.
- Employees and group responsible can change, select, and display indirect labor tasks if they have the required authorization and if the indirect labor task does not yet have the status completed. You can delete any indirect labor tasks that were not processed. You can no longer delete indirect labor tasks that have the status *Completed*. You can archive indirect labor tasks.
- Perform mass changes. You can simultaneously set the start and end times for multiple indirect labor tasks. For example, a group responsible can select the relevant indirect labor task at the end of a group meeting, and set the end time and therefore the status *Completed* for everyone collectively.
- Record start and end time. For indirect labor tasks, you can set start and end times either by entering them manually, or by choosing a pushbutton. The status is set to *In Process* or *Completed*.
- You can set the status for indirect labor tasks. If you select the status *In Process*, the start time is set at the same time. If you select the status *Completed*, the end time is set at the same time.
- You can specify an activity area for the indirect labor task, for evaluation purposes, and for location details that define the execution location.
- You can create a note, to specify an instruction for the indirect labor task, for example.
- You can specify an activity area for the indirect labor tasks, for evaluation purposes, and for location details that define the execution location.
- If a warehouse executes activities for multiple parties entitled to dispose, it may be important to know for which party a particular indirect labor task was performed.

**Examples**

Example 1

A warehouse manager creates an indirect labor task for his or her employees. The activity that is to be done is “sweep yard.” The affected employee selects the indirect labor tasks defined for him or her either on the desktop or using RF, and either sets the status to *In Process* or enters a start time. After completing the task, the employee sets the status to *Completed*, or enters the end time.

Example 2

At the end of a working day, an employee calls the function for processing indirect labor tasks and records the indirect labor tasks that he or she has completed during the day. The employee creates an indirect labor task for activity routine work,

from 8:00 to 8:30, a period in which he or she changed their forklift battery. In addition, after completing his or her pick orders, this employee spent half an hour between 11:30 and 12:00 sweeping the yard. The employee also creates an indirect labor task for this. For the rest of the day, the employee has executed workload documents for the pick warehouse orders they have completed. This means that the employee has seamlessly documented everything he or she has done during the entire working day.

**Indirect Labor Tasks using RF**

You can also execute indirect labor tasks in a radio frequency (RF) environment, provided you have logged on in the RF environment. You create indirect labor tasks. Alternatively, you process the indirect labor tasks created for you by selecting these, setting a status, or entering the start time. After completing the tasks, you set the status to *Completed* or enter the end time.





  

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# Exercise 5: Indirect Labor Tasks

## Exercise Objectives

After completing this exercise, you will be able to:

- Create and confirm an indirect labor task on the desktop
- Create and confirm an indirect labor task via RF
- Review employee efficiency in the warehouse management monitor

## Business Example

You want to create and confirm an indirect labor task using both the desktop and RF transactions. Following confirmation, you will review the efficiency reports available in the warehouse management monitor.

## Task:

Create and confirm an indirect labor task.

1. Create and confirm an indirect labor task via the desktop. Use the data in the table below:

| | |
|---|---|
| **External Step** | **CL##** |
| **Processor** | **Your Processor number from previous exercise** |

2. Create and confirm an indirect labor task from RF.
3. View the efficiency data from the warehouse management monitor

# Solution 5: Indirect Labor Tasks

## Task:

Create and confirm an indirect labor task.

1. Create and confirm an indirect labor task via the desktop. Use the data in the table below:

| External Step | CL## |
|---|---|
| Processor | Your Processor number from previous exercise |

a) In the *SCM SAP* menu, choose *Extended Warehouse Management* → *Labor Management* → *Maintain Indirect Labor Task*.

b) Choose *Create*.

Enter the data from the table above in the pop-up dialog.

c) Choose *Continue*.

d) Choose *Switch to Form View*.

e) Choose *Set Start Time* to populate the start time.

f) Choose *Set End Time* to populate the end time.

g) If desired, enter a *Planned Execution Duration*.

**Note:** If you leave this field blank, the efficiency is calculated at 100%.

h) Choose *Create/Change Note* icon if you wish to enter a note.

**Note:** If you enter a note, it will be visible on the desktop or from the monitor.

i) Choose *Save*.

j) Choose *Exit*.

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2. Create and confirm an indirect labor task from RF.

   a) From the *SCM SAP* menu, choose *Extended Warehouse Management → Execution → Log on to RF Environment*.

   b) Choose *Enter* on the first screen to go to the main menu.

   c) Choose *05 Internal Processes*.

   d) On the next menu screen, choose the down **v** button to go to the remaining menu items.

   e) Choose *08 Labor Management → 01 Indirect Labor Task Recording*

   f) Press function key **F3**, or choose the *F3* button to create a new entry.

   g) Enter *External Step* **CL##**

   h) To have the system assign the *Start Date and Time*, choose *F1 Start*, or you can enter these fields manually. The *End Date and Time* can be set automatically by choosing *F2 End*, or you can enter the *End Date and Time* manually.

   i) Enter a start date and time and end date and time.

   j) Choose function key **F4**, or the *F4 Save* button.

   k) Choose function key **F7** back.

   l) Choose function key **F1** two times to exit the RF environment.

3. View the efficiency data from the warehouse management monitor

   a) From the *SCM SAP* menu, choose *Extended Warehouse Management → Monitoring → Warehouse Management Monitor*.

   b) Choose the *Labor Management* node.

   c) Double-click on *Labor Utilization*.

   d) In the selection dialog, enter your *Processor* and then choose *Execute*  .

   e) Choose the *Form View* to see the details in a one-page format. Explore other Labor Management reports under this node.

   f) When finished, choose *Exit*  .

## Lesson Summary

You should now be able to:

- Explain the features of indirect labor tasks.
- Create and record indirect labor tasks.
- Make the configuration settings related to indirect labor tasks.
- Select and evaluate indirect labor tasks using the warehouse management monitor
- Use the RF framework to create and process indirect labor tasks

### Related Information

- For more information, visit http://help.sap.com. Choose *SAP Business Suite → SAP Extended Warehouse Management*.

## Unit Summary

You should now be able to:

- Describe the features and functions of Labor Management.
- Activate Labor Management
- Explain the role of the processor master data and create processor master data in EWM
- Configure external steps and activities for Labor Management
- Configure preprocessing
- Define the purpose of engineered labor standards
- Configure the use of ELS in EWM
- Use the formula and condition editors
- Explain the basic concepts and use of the travel distance calculation function.
- Explain the features of indirect labor tasks.
- Create and record indirect labor tasks.
- Make the configuration settings related to indirect labor tasks.
- Select and evaluate indirect labor tasks using the warehouse management monitor
- Use the RF framework to create and process indirect labor tasks

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# Test Your Knowledge

1. Labor Management is activated at what levels in EWM?

   *Choose the correct answer(s).*

   - □ A Warehouse
   - □ B Storage type
   - □ C Internal process step
   - □ D Activity type
   - □ E Activity area

2. Warehouse employees who will be recording time in relevant processes in Labor Management must have a _____ business partner master record created.

   *Fill in the blanks to complete the sentence.*

3. In the executed workload process, the planned and executed duration can be compared for which of the following?

   *Choose the correct answer(s).*

   - □ A Outbound delivery orders
   - □ B Inbound deliveries
   - □ C Warehouse orders
   - □ D VAS orders
   - □ E QI documents
   - □ F Warehouse tasks

4. In Labor Management, what document contains all of the relevant data that can be used to compare the planned and actual times?

   *Choose the correct answer(s).*

   - □ A Planned workload
   - □ B Executed workload
   - □ C Tailored measurement services
   - □ D Inbound delivery
   - □ E Performance document

5. The methods used in travel distance calculation are:

*Choose the correct answer(s).*

- □ A Minimal path
- □ B Euclidean
- □ C Manhattan
- □ D Straight line
- □ E Storage type

6. The _____ function is used to define the times that are required to execute an activity in the warehouse.

*Fill in the blanks to complete the sentence.*

7. Examples of indirect labor tasks in EWM are:

*Choose the correct answer(s).*

- □ A Picking
- □ B Cleaning
- □ C Meetings
- □ D Putaway
- □ E Loading

8. Indirect labor tasks can be created for groups, such as team meetings.

*Determine whether this statement is true or false.*

- □ True
- □ False


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# Answers

1. Labor Management is activated at what levels in EWM?

   **Answer:** A, C

2. Warehouse employees who will be recording time in relevant processes in Labor Management must have a processor business partner master record created.

   **Answer:** processor

3. In the executed workload process, the planned and executed duration can be compared for which of the following?

   **Answer:** C, D, E

4. In Labor Management, what document contains all of the relevant data that can be used to compare the planned and actual times?

   **Answer:** B

5. The methods used in travel distance calculation are:

   **Answer:** B, C

6. The engineered labor standards function is used to define the times that are required to execute an activity in the warehouse.

   **Answer:** engineered labor standards

7. Examples of indirect labor tasks in EWM are:

   **Answer:** B, C

8. Indirect labor tasks can be created for groups, such as team meetings.

**Answer:** True



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## Course Summary

You should now be able to:

- Activate labor management
- Set up processes that labor management is being used

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# Feedback

SAP AG has made every effort in the preparation of this course to ensure the accuracy and completeness of the materials. If you have any corrections or suggestions for improvement, please record them in the appropriate place in the course evaluation.



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