Guide to Implementation of SAP Lean WM

Applies to:

SAP ECC 6.0

Summary

This article explains various characteristics of lean WM and then guides the consultant to configure lean warehouse management in system.

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Author Bio

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Currently he is working as MM/WM consultant for implementation project at Volkswagen Group of America.

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Objectives

- To implement lean warehouse management for SAP plants (using 0001 as template/reference warehouse)
- All storage locations within the plants will be linked to the Lean WM warehouse.

When to choose lean WMS over full WMS

Below characteristics of Lean WM facilitates decision of choosing lean WMS over full WMS:

- If warehouse structure is not too complex then it is normally suggested to go for Lean WM solution.
- In lean WM the inventory management is done exclusively on the level of storage location.
- The system does not update the inventory data in quant at storage bin level. Stock is managed only by quantity.
- The goods to be stored in a fixed storage bin and further it can be defined in material master.

Difference with Transfer Order Creation

Transfer orders created with Lean WM instead of normal WM have the following characteristics:

- Inventory differences are managed in IM area. Posting of inventory differences is not possible in WM.
- Transfer Order Confirmation of is not required in lean WM.
- Changes in delivery quantity even after the transfer order is created is possible in lean WM,
- Tracking of performance data, such as assignment of transfer order/picking list to a picker, return confirmation of actual times or determination of planned times, is possible with transfer orders created via lean WM.
- Transmission of Lean WM transfer order data to external third party or other satellite SAP systems is possible.

System Configuration

Detailed Customizing setting for implementation of lean WM is as following:

1. Copy Warehouse Number to create new lean Warehouses
CUSTOMIZING PATH: IMG → Enterprise Structure → Definition → Logistics Execution → Define, copy, delete, check warehouse number → Copy/delete/check warehouse number
EXECUTION: Click on button "COPY"
PARAMETERS-SETTINGS: Enter from warehouse number:'001' (Lean WM (without stocks)) to warehouse number:
RESULT: New lean Warehouse/s is/are created.
REMARKS: 1. Here you are copying all the standard setting related to SAP provided lean warehouse i.e. 100. 2. You can then subsequently go and change the copied setting at various IMG nodes which will be discussed in next customizing steps. 3. Subsequently the description of the new warehouse number should be changed if copied from 100. 4. IMG → Enterprise Structure → Definition → Logistics Execution → Define, copy, delete, check warehouse number → Define warehouse number (SPRO). Warehouse number description _____ (Lean-WM)

2. Assign Warehouse Number to Site/Storage Location
PRE-REQUISITE/S: Lean warehouse number and reference plant/site must have been created.
CUSTOMIZING PATH: IMG → Enterprise Structure → Assignment → Logistics Execution → Assign warehouse number to site/storage location
EXECUTION: Click on Button "New Entries" or copy existing
PARAMETERS-SETTINGS: Plant/Site SLoc   Warehouse P100   _____   _____ P100   _____   _____

RESULT:

A lean warehouse_____ is connected to storage location _____ of a plant _____

REMARKS:

In order to SAP system to know that which warehouse controls what storage locations one should always do this assignment.

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3. Define new storage types

PRE-REQUISITE/S:

Lean warehouse number and storage location must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → WM → Master data → Define storage type

EXECUTION:

Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

  Copy SAP standard interim storage types to create new storage types for newly defined lean warehouse number _____

1. Copy Warehouse 001 and Storage type 902 (GR for external receipts like PO)
2. Copy Warehouse 001 and Storage type 904 (Customer Returns)
3. Copy Warehouse 001 and Storage type 910 (GI area General)
4. Copy Warehouse 001 and Storage type 916 (Shipping area Deliveries like GI to Delivery note)
5. Other than above ones, copy any required SAP standard interim storage type (normally falls between 900-999 and create it for newly defined interim/newly customized storage type)

RESULTS:

1. Newly defined storage types can be used for picking and put away purpose.

REMARK:

Once a new storage type is created, one has to go and change the various details as per the client requirements. The various such details are shown in screenshot.

(Please refer to the screenshot on next page)

Change View "Storage type definition": Details

New Entries

Whse number	001	Central warehouse	☐ SU mgmt active
Storage type	902	GR Area External Rcpts	☐ Stor.type is ID pnt
			☐ Stor.type is pck pnt

Stock placement control

Putaway strategy			
☐ Stock plcmt requires confirmation		Capacity check method	☐ Act.capac.
Dst bin ch. during confirm		☐ SUT check active	
Mixed storage	X	☐ Storage sec. check active	
Addn to stock	X	Block upon stock plcmt	
☐ Retain overdeliveries		Assigned ID point stor. type	
Mail control		☐ User exit act.	

Stock removal control

Stck removal strategy	
☐ Stock rmvl requires confirmation	☑ Propose post. change at storage bin
☑ Allow negative stock	Block upon stock rmvl
☐ Full stk rmvl reqmt act.	Assigned pick point stor. ty.
☐ Return stock to same storage bin	Return storage type
☐ Execute zero stock check	☐ User exit active
☐ Round off qty	
HU picking control	

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4. Define control parameters and number ranges f. warehouse no.
PRE-REQUISITE/S: Lean warehouse number, storage location and storage type must exist.
CUSTOMIZING PATH: IMG → Logistics Execution → Shipping → Picking → Lean WM → Define control parameters and number ranges f. warehouse no. →
EXECUTION: Click on Button "New Entries" or copy existing
PARAMETERS-SETTINGS: Illustration is as following:

Lean Warehouse	Weight Unit	Def. UoM	Lean-WM	Link to subsys.	TO & Ref. no. ranges
_____	_____	___	X	X	01
_____	_____	___	X	X	01

RESULTS:

This will have control over various important parameters and assignment of no. ranges for TO as shown the screen shot below.

Change View "Control Warehouse Number in Lean WM"

Whse number   001   Central warehouse

Weights / units of measure
Weight Unit   KG
Volume unit
Default UoM   L

Time unit/Performance data

Notifications / Messages
Performance data

Number ranges
Transfer order   01
Group number   01

Control data / Management
☑ Lean WM active
☐ Link to subsystem active

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5.   Maintain number range intervals for transfer orders

PRE-REQUISITE/S:

Lean warehouse number, storage location and storage type must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Define control parameters and number ranges f. warehouse no. → Maintain number range intervals for transfer orders

EXECUTION:

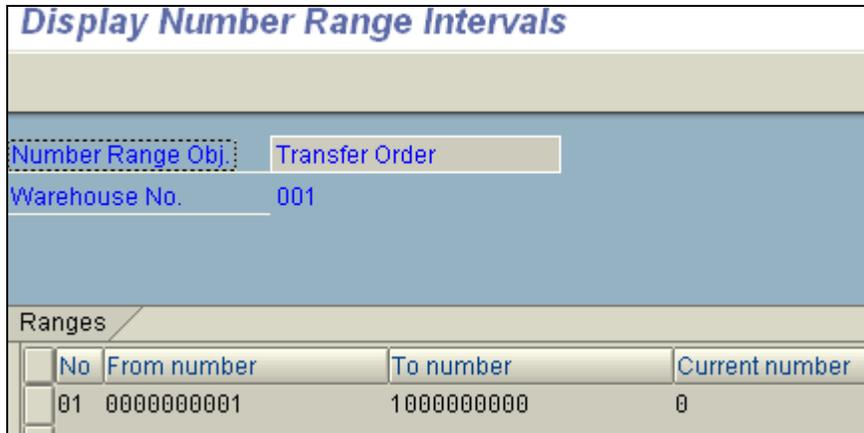Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

Lean Warehouse	Weight Unit	Def. UoM	Lean-WM	Link to subsys.	TO & Ref. no. ranges
_____	_____	___	X	X	01
_____	_____	___	X	X	01

RESULTS:

1. Lean WM will now be active
2. Link to subsystems will be maintained.
3. Internal number assignment will be maintained for TO and reference documents

Following screenshot shows on how the number ranges are defined.

Display Number Range Intervals

Number Range Obj.	Transfer Order
Warehouse No.	001

Ranges

No	From number	To number	Current number
01	0000000001	1000000000	0

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6. Maintain Number Range Intervals for Reference Numbers

PRE-REQUISITE/S:

Lean warehouse number, storage location and storage type must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Define control parameters and number ranges f. warehouse no. → Maintain Number Range Intervals for Reference Numbers

EXECUTION:

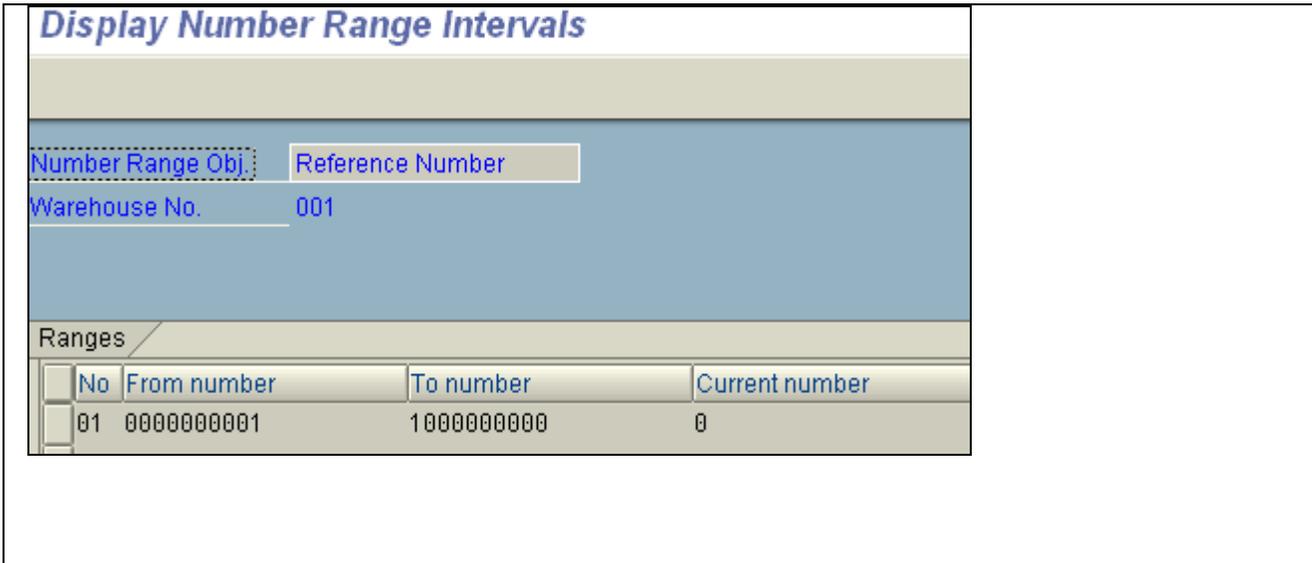Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

For Lean-WM _____

No	From Number	To Number
01	_____	_____

RESULT:

1. TO will now be created with internal number assignment
2. Reference Document will now be created with internal number assignment

Following screenshot shows on how the number ranges are defined.

Display Number Range Intervals

Number Range Obj.   Reference Number
Warehouse No.   001

Ranges

No	From number	To number	Current number
01	0000000001	1000000000	0

---

7. Define Transfer (Shipment) types

PRE-REQUISITE/S:

Lean warehouse number must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Define transfer types

EXECUTION:

Click on Button "New Entries" or copy existing
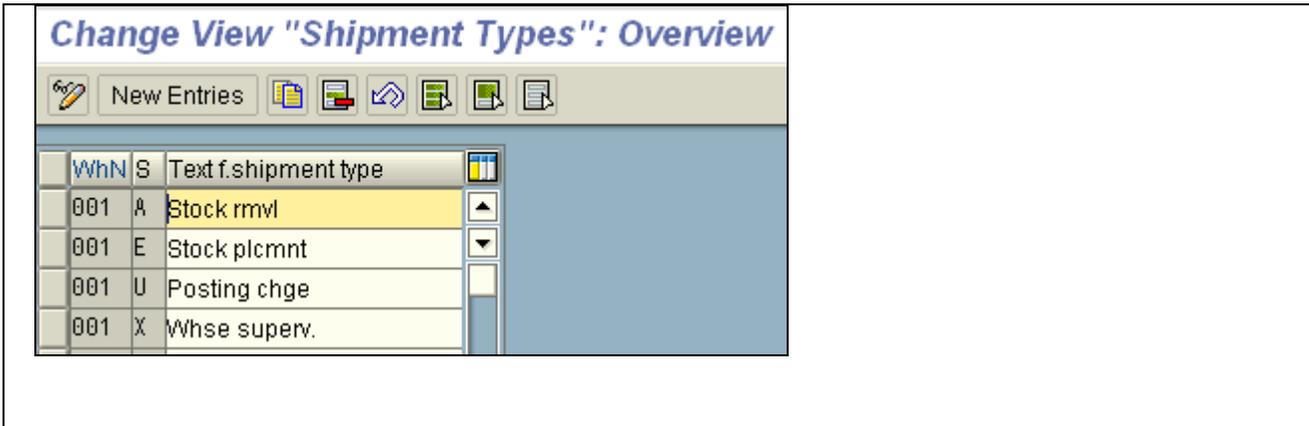
PARAMETERS-SETTINGS:

Create transfer types for new warehouse by using existing standard shipment types

Warehouse no.	Shipment types	Text for shipment types
_____	A	Stock Removal
_____	E	Stock Placement
_____	U	Posting change
_____	X	Warehouse Supervision

RESULTS:

Transfer types will be now used to classify movement types. In Lean WM, the shipment/transfer types are required for movement type control.

Following screenshot shows four important and most widely used shipment types in SAP.

Change View "Shipment Types": Overview

WhN	S	Text f.shipment type
001	A	Stock rmvl
001	E	Stock plcmnt
001	U	Posting chge
001	X	Whse superv.

---

8. Define Movement types

PRE-REQUISITE/S:

Lean warehouse number, shipment types, fixed storage bins and relevant storage type must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Define Movement types

EXECUTION:

Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS: ONE COULD DEFINE FOLLOWING IMPORTANT MOVEMENT TYPES-

1. 101- GR for purchase order
2. 255- GI General
3. 601- GI to delivery note
4. 451- Returns from customers
5. 651- Returns via Delivery doc
6. 999- Warehouse supervision
7. 301- Stock transfer plant (stock removal)
8. 302- Stock transfer plant (stock placement)
9. 309- Posting change, General
10. 311- Stock transfer St. Location (stock removal)
11. 312- Stock transfer St. Location (stock placement)
12. 321- Posting change, Quality

Following Information will be filled up for each of the above movement types

Warehouse number _____

Movement type _____

	Storage type	Storage bin
Source	_____	_____
Destination	_____	_____
Return	_____	_____

Shipment type _____

TO creation Screen _____

Screen for TO confirmation _____

Manual TO creation not allowed ☐ yes or no

Print Code _____

To item can be confirmed immediately ☐ yes or no

Propose TO confirmation ☐ yes or no

RESULTS:

Any standard view of WM movement types is visible like following; one has to do changes into various positions according to the business requirements. For e.g. one has to decide upon whether the bin creation would be a manual or dynamic one or if the manual creation of TO using this movement type is possible or not.

Change View "Movement Types in the Warehouse Management System": Detai

| Warehouse Number | 001 | Central warehouse |
| Movement Type | 101 | Goods receipt for pur.or. |

	Cat	Stor. Bin	FxdBn	Scr.
Src	902		☐	☑
Dest			☐	☐
Ret				

Shipment Type   E   Stock plcmnt
Requirement type   B   Purchase Order

Screen Control
TO Creation   1   Putaway prep
TO Confirmation
TO Display

Transfer Requirements
☑ Manual TO creation not allowed
☐ Manual TR creation allowed
Transfer Priority

Print
Print code   01   Single print / TO item

Background Processing
Automatic TO

Control
☑ GR data in quant
☐ Manual Storage Bin Input
☑ Consider Pre-Alloc.Stock
☐ Overdeliveries
Foreground/Backgrnd
HU picking control

Confirmation
☐ TO item can be confrmd immed.
☐ Propose Confirmation
☐ Post to same bin
Ref.Stor.Type Search

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9. Define Print Control

PRE-REQUISITE/S:

Lean warehouse number must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Define Print Control

EXECUTION:

Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

1. Create the spool indicators for each warehouse number.

> The printout of slips in the SAP system always involves the spool system. Presently standard spool codes 01 and 02 with title LVS1 AND LVS2 are used; one can continue using the same. In addition to this, information is needed to know what should be set up in the following parameters.

> o Number of copies to be printed (1, 2 ……) and Dataset name of the printout in the spool system (Title of the spool like LVS1 and LVS2)

> o "Immediate print" (Yes or No) and

> o "Delete after print" (Yes or No)

2. Create the print codes for each warehouse number.

> The print codes/indicator defines the following information for printing transfer orders:

> o Form (i.e. name of the SAP script form used for printing of TO) and Sort sequence (via sort pool) in which the individual items of a transfer order are to be printed.
> o One should have the list of print codes that will be used. Standard list of print codes is as defined for warehouse 001.

> **Remarks:** One can assign a print indicator to each movement type of the Warehouse Management system. A transfer order is always assigned to a movement type. The print indicator determines in this way the general print parameters for the transfer order.

3. Assign the printers to the individual movements.

> Here one can assign various printers and spool codes on the basis of the movement (source storage type - destination storage type). One can also choose to suppress printing of the transfer order.

> Here the additional information, like printer name and the Form for printing of TO be needed.

> There are now parameters (print indicator, form) that you can define both in the "printer-movement" setting and in the print indicator setting.

4. Assign the printers to the storage types.

> The assignment of a printer to each storage type can be performed.

5. Assign the print codes to the movement types.

> A print indicator is assigned to each movement type. As mentioned above, the general print information is defined by this assignment.

6. Assign the print reports to the warehouse numbers.

> One must assign a print program to each warehouse number. The name of the standard program is RLVSDR40. Since modifications are usually made to the standard print program, we can use ZLVSDR00.

7. Assign the print control to the multiple processing runs.

A print program is assigned to each warehouse number for printing multiple transfer orders. In addition, you can configure the following settings like Print indicator, Printer and time of output

8. Using the analysis program, check whether the settings comply with clients' needs.

REMARKS:

Printing of TO takes place with following logic-

1. First, the system checks whether a printer is defined in the printer-movement settings. If so, it chooses that printer. If not, the system decides how to proceed by consulting the "DruVonTyp" parameter that is set in the printer-movement settings.

2. If that parameter is set, the system checks to see if a printer is defined in the printer-storage type settings and if so, uses that one.

3. If, after running through the execution described above, the computer still cannot determine a printer, it then uses the printer defined in the user master of the current user.

Print control helps you to define the following:

- Which slips are to be printed for the movements (that is, for the transfer orders) within the Warehouse Management System?
- How these slips are to be printed (that is, which forms are to be used?
- How many copies are to be printed) and on which printer a slip is to be printed automatically?

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10. Define Inventory Management Interface

PRE-REQUISITE/S:

Lean warehouse number and WM Movement types must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Inventory Mgmt Interface

EXECUTION:

Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

This setting will create Interface for the already created WM movem. types for new lean warehouse.

Following activities will be carried out to make an interface of these new WM movement types with IM movement types.

1. Check the WM reference movement types that correspond to the IM movement types, by doing the following:

        a) Choose the view *Updating Control / WMS Movement Types*.

        b) Select movement types.

        c) Branch to the detail view of the movement types.

2. If the movement type 999 is involved, the movement in MM-IM has no effect on the Warehouse Management System.

3. Define parameters like special stock Indicator for WM, special stock, Movement Indicator, TR creation Indicator, Automatic TO Indicator etc.

RESULTS:

Change View "Assignment Movement Type MM-IM to Movement Type

W...	R...	SpStInd	M...	S	SpMvtl	S	M...	T	Cr...	Imme...	Mai...	GR D...	Add.D...	Ship-to party	Del...	Ve
001	344			E			309		☑	X	01					
001	344			K			309		☑	X	01					
001	344			Q			309		☑	X	01					
001	501	Q					501	X	☐	X						
001	501	Q		E			501	X	☐	X						
001	1	Q		K			501	X	☐	X						

REMARKS:

As the standard WM movement types are used during configuration, one can copy the same for our new warehouse to create an Interface with IM.

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11. Define Degree of Activation of the Warehouse Management

PRE-REQUISITE/S:

Lean warehouse number, storage location and storage type must exist.

CUSTOMIZING PATH:

IMG → Logistics Execution → Shipping → Picking → Lean WM → Control "Site/Storage Location/Warehouse No." Assignment

EXECUTION:

Click on Button "New Entries" or copy existing

PARAMETERS-SETTINGS:

Plant/Site   Stor. Loc. WhNo   Degree of activation   Stor.type for picking in L-WM   ____   _____
_____   1   __   _____
____   _____   _____   1   __   _____

RESULTS:

This key controls the use/degree of activation of the warehouse management for a storage location. This controls whether a normal management of bin stocks or (as is the case here) for e.g. If lean WM is to be selected in connection with deliveries make the degree of activation '1'.

Change View "Lean WM: Control of Assignment "Plant / Stor.Loc - Whse N

	Plnt	Stor. Loc.	Wh	Degree of activatio	Stor.type for picking in Le	
	0001	0088	001	1	CEN	

End note:

This document thus completes step by step approach of doing customizing of lean warehouse in SAP.

Related Content

1. [Using a Transfer Order as a Pick Order in Lean WM](#)
2. [Warehouse Management with Lean WM](#)

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