SCM-EWM

Consulting Note **2255209**

Configuration of Flow Racks in SAP Extended Warehouse Management Using LOSC

Version	Date	Comment
1.0	2015/12/17	Reviewed Version
1.1	2016/5/12	Updated Version Considering EWM Release 9.4

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1 Disclaimer and Legal Information

2 Overview

A flow rack is a special storage type which allows putaway and replenishment at the back side of the rack and picking from the front side. The stock is put on rolls or rails and is transferred from the back to the front electrically or via gravity. The bins of a flow rack are often called "tunnels" because of them being very long to accommodate a great amount of stock in the queue. This concept is often used for products which require strict FIFO (first in - first out) handling because of specific shelf life expiration dates, or for fast-moving products which have to be constantly available near staging areas.

Also, since picking and putaway happens at two different locations, warehouse clerks performing the two tasks simultaneously do not cross paths while doing so.

Usually the back of a flow rack is labeled differently than the front for that matter. This requires the back side to be a separate storage bin than the bin itself in EWM. The result of this is that products are supposed to be available in the front but put away at the back. One way to carry out the transfer between these bins and reroute the destination of a putaway task to the back side is subject to this document.

3 Aimed Result

- On creation of a warehouse task destined to a flow rack "front bin" (the actual flow rack bin), two warehouse tasks are created. The first one is automatically rerouted to the corresponding dummy back bin, the second (at first inactive) one moves the product from the back bin to the front bin.
- When confirming the first task by putting away stock into the back of the flow rack, the second task is confirmed automatically to represent the autonomous movement of the stock inside the flow rack tunnel towards the front.
- When cancelling the respective task, the follow-up task will be cancelled along with it as well.
- All physical stock and capacity information is available through the front bin, thus picking happens directly from there.

4 Solution

Note: all configuration screenshots or BAdI Implementations are working examples; your scenario might require a different setup. In general, it is recommended to check additional documentation where applicable, e.g. IMG documentation, BAdI interface documentation.

4.1 Configuration

4.1.1 Considerations Regarding Handling Units

Most commonly, you will store your products in flow racks without Handing Units which are mapped in EWM. Since LOSC needs HUs in order to function though, the initial putaway process in the system has to happen with an HU. Afterwards, the HU can be deleted automatically, so that the stock will be available as single products if desired. Considering this, putaway has to either happen through an HU warehouse task, or through a product WT while homogenously removing the whole stock from an HU. **Note: it is still required to allow HUs in the back bins as the products will still be on an HU at this point of time.**
There are three different scenarios to consider:

1. **Unpack HUs for Entire Storage Type**

In this example, all products which are stored in the flow rack will lose their handling unit once they arrive at the front. **Note:** HUs do not necessarily have to be blocked via the field "HU Requirement," though they will be in most cases if storing them is not intended.

2. **Unpack HUs for Select Bins or Products**

You can as well trigger this behaviour for select criteria such as specific products or single storage bins. For this you can utilize the BAdI `/SCWM/EX_CORE_CO_UNP_OUTHU`. Within the implementation, the exporting variable `ev_del_level`, which defines how many layers of HUs will be unboxed, has to be set to a value greater than 0.
For instance, stock can be available on pallets in the replenishment rack, and each unit is separately packed in a carton which is also mapped to a HU in the system. It would then be possible to set `ev_del_level` to 1, resulting in the employee taking the pallet, bringing it to the flow rack and unloading the individual cartons into a flow rack tunnel without placing the pallet in the flow rack. It is possible to implement this behavior e.g. for specific storage bins or any other field in `is_ltap`.
Since the BAdI is called on every WT confirmation, it is also necessary to check if the destination bin is a flow rack front bin.

possible Implementation of `/SCWM/EX_CORE_CO_UNP_OUTHU`:

```
IF is_ltap-nltyp = 'FRFR' AND (
  is_ltap-nlpla = 'FLOW-00-00-A'
  OR is_ltap-nlpla = 'FLOW-00-00-B'
  "OR other storage bins intended for HU unpacking
  ).
  ev_del_level = 1.
ENDIF.
```

3. **Leave Whole HU in Flow Racks**

If you store entire handling units such as pallets or cartons which are also mapped as handling units in EWM, you will need to adjust two settings in the following storage type configuration of the flow rack front bin:
- Clear out the field "HU Requirement."
- Uncheck "Do not Put Away HUs."

4.1.2 Storage Bin Setup

The following example has been configured for the first scenario, where HUs will be deleted after putaway for the entire flow rack storage type.

- • Set up storage types for flow rack front and back storage bins.

    IMG → SCM EWM → EWM → Master Data → Define Storage Type

Change View "Storage Type Definition": Details

New Entries   BC Set: Change Field Values

| Warehouse No. | B7VL | Plant=WhseNo in B7V |
| Storage Type | FRFR | Flow Rack Front (Main) |

General

Storage Type Role	☐	Storage Behavior	☐
Level of Avail. Qty	☐	Avail. Qty: Batches	☐
HU Requirement	Y	Hazard.Sub.Mgmt	☐
Max. No. Bins	☐	Qty Classific.	☐
☐ Check Max.No.Bins		External Step	☐
☑ Use Fixed Bins		☐ Do Not Explode Prod.	
Fixed Bins Mode	☐	Default Distance	☐ M
☑ Do Not Assign Fixed Bin Automatically		Stge Type Level	☐
☐ No Capacity Update		Multi-Depth	☐
		ACS Control	☐

Putaway Control

☐ Conf.Putaway		☐ ID Point Active	
☐ HU Type Check		☑ Do not Put Away HUs	
☐ Stor.Ctrl/Put.Compl.		☐ Check Max.St.TypeQty	
Putaway Rules	2	☐ Delete Stock Identification	
Addn.Stock Forbidden	☐	SrchRule EmptyBin	☐
Stor. Section Check	☐	Level: Add. to Stock	☐
Split During Putaway	☐	Capacity Check	☐
Thrshld Addition	☐	☐ Early Cap. Check	
Ptwy Stor. Ctrl	☐	PutawayQtyClass	☐
WT Generic	☐	Rounding After Split	☐
Mixed Storage	☐	☐ Mix. Stck Types	
Mixed Storage in HU	☐	☐ Mixed Owners	
QuantAddnStk GRD	☐	☐ Mix.PartiesEnt.	
QuantAddnStk SLED	☐	☐ Mixed Insp.Docs	
QntAddnStk CertNo.	☐	☐ Mixed Sp.Stocks	
QntAddnStk alt. UoM.	☐	☐ Mixed AUoM	

Stock Removal Control

☑ Confirm Removal		☐ Pick Pnt Active	
☐ Stock on Resource		☐ Use for Rough Bin Determination	
Negative Stock	☐	Stock Removal Rule	FIFO
HU Picking Ctrl	☐	Round Whole Units	☐

Goods Movement Control

Availability Group	002	☐ Mandatory	
Non-Dep. Stock Type	☐	☐ No GI	
Post.Change Bin	☐	Stock Type Role	☐

Replenishment

Repl. Level	☐	Tolerance	☐
		☐ Tolerance WT	

Change View "Storage Type Definition": Details

☌ New Entries 🗈 🖪 🔄 🔄 🖹 🖶 BC Set: Change Field Values

Warehouse No.	B7VL	Plant=WhseNo in B7V
Storage Type	FRBA	Flow Rack Back (No Putaway)

General

Storage Type Role		Storage Behavior	
Level of Avail. Qty		Avail. Qty: Batches	
HU Requirement		Hazard.Sub.Mgmt	
Max. No. Bins		Qty Classific.	
☐ Check Max.No.Bins		External Step	
☐ Use Fixed Bins		☐ Do Not Explode Prod.	
Fixed Bins Mode		Default Distance	M
☐ Do Not Assign Fixed Bin Automatically		Stge Type Level	
☐ No Capacity Update		Multi-Depth	
		ACS Control	

Putaway Control

☑ Conf.Putaway		☐ ID Point Active	
☐ HU Type Check		☐ Do not Put Away HUs	
☐ Stor.Ctrl/Put.Compl.		☐ Check Max.St.TypeQty	
Putaway Rules	5	☐ Delete Stock Identification	
Addn.Stock Forbidden		SrchRule EmptyBin	
Stor. Section Check		Level: Add. to Stock	
Split During Putaway		Capacity Check	
Thrshld Addition		☐ Early Cap. Check	
Ptwy Stor. Ctrl		PutawayQtyClass	
WT Generic		Rounding After Split	
Mixed Storage		☐ Mix. Stck Types	
Mixed Storage in HU		☐ Mixed Owners	
QuantAddnStk GRD		☐ Mix.PartiesEnt.	
QuantAddnStk SLED		☐ Mixed Insp.Docs	
QntAddnStk CertNo.		☐ Mixed Sp.Stocks	
QntAddnStk alt. UoM.		☐ Mixed AUoM	

Stock Removal Control

☐ Confirm Removal		☐ Pick Pnt Active	
☐ Stock on Resource		☐ Use for Rough Bin Determination	
Negative Stock		Stock Removal Rule	FIFO
HU Picking Ctrl		Round Whole Units	

Goods Movement Control

Availability Group	002	☐ Mandatory	
Non-Dep. Stock Type		☐ No GI	
Post.Change Bin		Stock Type Role	

Replenishment

Repl. Level		Tolerance	
		☐ Tolerance WT	

Setting up two separate storage types for the front and the back bin allows less room for errors during manual replenishment: As long as the main (front) bin is selected as the destination storage type for putaway, the system respects the selection and does not search for free bins on the back side.

- Set up a storage bin type for one **entire** flow rack tunnel, specifying its maximum weight, dimensions and volume accordingly.

IMG → SCM EWM → EWM → Master Data → Storage Bins → Define Storage Bin Type

- Create pairs of storage bins for back and front.

IMG → SCM EWM → EWM → Master Data → Storage Bins → Define Storage Bin Structure
/SCWM/LS10: Generate Storage Bins

  - For the front bins, use the previously created storage type and storage bin type
  - For the back bins, use the previously created storage type but **not** the storage bin type; set the XYZ-coordinates to the physical back of the tunnels

- Maintain fixed bin assignments for the front bins
  - Optional: in order for the putaway strategy **Near Fixed Picking Bin** (which places replenishment stock into a reserve storage area near fixed storage bins of that material) to function as desired, it is recommended that you maintain the fixed bin assignments for the back bins as well.
  - Optional: maintain product quantities for replenishment in the front bins.

/SCWM/BINMAT: Maintain Fixed Storage Bin

WhN	Ent.toDisp	Storage Bin	Typ	Product	StBinI	Changed On	Max.Qty	DisplayUoM	Min. Qty	DisplayUoM	Fixed
B7VL	BPB7VLV	FLOW-00-00-A	FRFR	DW-PROD-S02		26.11.2015	500,000	EA	200,000	EA	☐
B7VL	BPB7VLV	FLOW-00-00-B	FRFR	D064867_PROD-S01		26.11.2015	500,000	EA	200,000	EA	☐
B7VL	BPB7VLV	FLOW-00-02-A	FRFR	PROD-M02		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-02-B	FRFR	PROD-S01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-04-A	FRFR	PROD-L01		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-04-B	FRFR	PROD-L01		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-06-A	FRFR	PROD-M02		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-06-B	FRFR	PROD-M02		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-08-A	FRFR	PROD-L03		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-08-B	FRFR	PROD-L03		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-10-A	FRFR	D064867_PROD-S01		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-10-B	FRFR	PROD-L02		26.11.2015	10,000	EA	5,000	EA	☐
B7VL	BPB7VLV	FLOW-00-12-A	FRFR	PROD-M01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-12-B	FRFR	PROD-M01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-14-A	FRFR	PROD-S02		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-14-B	FRFR	PROD-S02		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-16-A	FRFR	PROD-M01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-16-B	FRFR	PROD-M01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-18-A	FRFR	PROD-S01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-18-B	FRFR	PROD-S01		26.11.2015	50,000	EA	25,000	EA	☐
B7VL	BPB7VLV	FLOW-00-20-A	FRFR	PROD-M02		26.11.2015	50,000	EA	25,000	EA	☐

4.1.3 Configuring LOSC

- Create an entry in the LOSC configuration using the front bin storage type as the key for destination storage type and the back bin storage type as the intermediate storage type.

IMG → SCM EWM → EWM → Cross Process Settings → Warehouse Task → Define Layout-Oriented Storage Process Control

Change View "Layout-Oriented Storage Control": Overview

New Entries   BC Set: Change Field Values

Layout-Oriented Storage Control

Wa...	Sou...	Sou...	Type	De...	Whole HU	HUTGr	Sequence...	Int. Storage Type	Interm. Stor. Sec.	Intermediate Bin	Whse Proc. Type	ID Point	Pick Point	Segment	
B7VL			FRFR			Not ...	1	FRBA				☐	☐		

Important note: Please refer to 4.6 at this point if you use labor management in your warehouse.

4.1.4 Optional: Replenishment Setup

You can set up automatic or planned replenishment for the case that the flow rack runs empty. Below you will find an example of an automatic replenishment setup.

- Create a "replenishment" rack (including a specific storage type – e.g. *FRSU*) for the flow rack to source from.
- Create a warehouse process type for replenishment which is configured to pick stock from this rack and move it to the flow rack front bin type.

IMG → SCM EWM → EWM → Cross-Process Settings → Define Warehouse Process Type

- Set up an automatic (or planned) replenishment strategy using the previously created replenishment warehouse process type.

IMG → SCM EWM → EWM → Internal Warehouse Processes → Replenishment Control → Activate Replenishment Strategies in Storage Types

Change View "Replenishment Strategy Settings": Details

New Entries

Warehouse No.	B7VL Plant=WhseNo in B7V
Storage Type	FRFR Flow Rack Front (Main)
Repl. Strat.	Automatic Replenishment ▾

Replenishment Strategy Settings

Whse Proc. Type	FRRE
Qty Type Used	Physical Quantity ▾
Ind. Exec. Time	

☐ Pckr-Drvn Repl.
Storage Type ____
St. Type Group ____

☐ Ignore Bins with Stock Removal Lock
☑ WT Immed.
☐ Do not consider putaway quantity
☐ New quantity at WT creation

Important note: Please refer to 4.6 at this point if you use labor management in your warehouse.

4.2 Create a New Class in Customer Namespace

e.g. `ZCL_FLOWRACK`

4.3 BAdI Implementation: Change Intermediate Bin to Back Bin

Implement BAdI `/SCWM/EX_CORE_LSC_LAYOUT` in the class doing the following:

- Since the LOSC BAdI is also called on WT confirmation, a check has to be performed whether the current call of the method happens during WT creation. If so, the field `is_ordim_o-tostat*` will be set to `wmegc_to_open`.
- Perform another check on whether the destination storage type is the flow rack front bin and only continue if that is the case.
- Determine the corresponding back bin (this can be done by either an algorithm, a specific naming convention or by creating a database table in which front- and back bins are assigned to each other – and checking for an entry in this table).

Note: The destination storage bin can be found in `is_ordim_o-nlpla*`
Since you will need the same algorithm, naming convention or database access later on, it is recommended to encapsulate this in a separate method. For an example, please refer to 4.4.

- Set the intermediate storage bin to the determined corresponding bin.

Implementation of BAdI Method

```
/SCWM/IF_EX_CORE_LSC_LAYOUT~LAYOUT
      *Only continue when called during WT creation
         IF is_ordim_o-tostat <> wmegc_to_open.
           RETURN.
         ENDIF.

      *Change intermediate bin to back bin using naming convention
         me->gm_get_backbin(
           EXPORTING
             iv_frontbin = is_ordim_o-nlpla
             iv_lgtyp    = is_ordim_o-nltyp
           IMPORTING
             ev_backbin = cv_ilpla
           EXCEPTIONS
             no_flowrack = 1
             no_frontbin = 2
             OTHERS      = 3 ).

      *User tries to create WT on Back Bin
         IF sy-subrc = 2.
           "insert proper error handling if desired
         ENDIF.
```

*Note for Systems Lower Than EWM 9.4:

If you are working on a system lower than EWM 9.4, `is_ordim_o` is missing in the signature of the implemented BAdI `/SCWM/EX_CORE_LSC_LAYOUT`. In order to still get the required destination storage bin, implement the BAdI `/SCWM/EX_CORE_RMS_DETERMINE`, where you can store the given `is_ltap` as a variable in your class. The LOSC BAdI Implementation then has access to it and you can therefore use the field `nlpla` from your variable instead of `is_ordim_o-nlpla` for further processing.
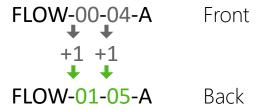
4.4 Create Method for Determining the Back Bin

gm_get_backbin:

```
        DATA lv_number(2) TYPE n.

    *flow rack front bin type – change intermediate bin to back bin
        IF iv_lgtyp CS 'FRFR'.
          ev_backbin = iv_frontbin.

          lv_number = iv_frontbin+5(2) + 1.
          ev_backbin+5(2) = lv_number.
          lv_number = iv_frontbin+8(2) + 1.
          ev_backbin+8(2) = lv_number.

    *flow rack back bin type
        ELSEIF iv_lgtyp CS 'FRBA'.
          RAISE no_frontbin.

    *no Flow Rack storage bin type
        ELSE.
          RAISE no_flowrack.
        ENDIF.
```

This method basically handles the assignment of the front bins to the respective dummy back bins. For most warehouses, it is suggested to use bin names from the next aisle of the same rack for the dummy bins. Our naming convention in the example is defined the following way:

- First 5 letters are always the same for flow racks: **FLOW-**
- Number of the aisle: **01-**, **02-** and so on
- Number of the stack: **00-**, **02-**, **04-** or **01-**, **03-**, **05-** → even numbers for the front side, uneven for the back side
- Letter for the level: **A**, **B**, **C** and so on

With this mask, you can determine the back bin by simply increasing the first two numbers by one, which is precisely what the method does:

FLOW-00-04-A   Front

+1 +1

FLOW-01-05-A   Back

Additionally, the method shown above can differentiate between the two storage types and is able to raise an exception if it detects a manually created WT towards a back bin. A proper error handling for this case may be considered if desired.

4.5 BAdI Implementation: Automatic Confirmation of Follow-Up Task

The second task is set to map the back-to-front movement in the system. Since the product slides to the front automatically without human intervention, it would be convenient that it confirms itself automatically after manual confirmation of the putaway in the back. In order to achieve this locig, another BAdI implementation is necessary for that step. BAdI `/SCWM/EX_CORE_CO_POST` has to be implemented in your customer-namespace class and the following has to be done to achieve an automatic confirmation of the follow-up task:

- Check whether the WT is to be confirmed or cancelled using `it_ltap_vb-tostat`.
- For each WT to be processed, check for a flow rack front bin as the destination storage type and skip the current loop pass if this is not the case (this step is necessary when a user is confirming (or cancelling) several tasks at once, so that the implementation only applies to flow rack tasks).
- Look for the planned follow up WT using the function module `/SCWM/TO_READ_HU`.
- If found, update the status of the follow-up WT to "confirmed" or "cancelled" using the function module `/SCWM/TO_CONFIRM` or `/SCWM/TO_CANCEL`, respectively.
- Note: you need to set up a queued RFC to process follow-up task correctly, so that it is confirmed after its status changed from "inactive" to "open".
  - In order to serialize the queues for follow-up tasks, we used the name of the destination storage bin in its name.
  - You should as well consider monitoring the queues to ensure proper functionality. This can be done using transaction *SMQ2* or with the warehouse management monitor.

Implementation of BAdI Method

```
/SCWM/IF_EX_CORE_CO_POST~POST:
      DATA: lv_followup_queue TYPE trfcqin-qname.

      DATA: lt_to_conf     TYPE /scwm/to_conf_tt,
            lt_cancl       TYPE /scwm/tt_cancl,
            lt_ordim_o_src TYPE /scwm/tt_ordim_o.

      DATA: ls_ltap    TYPE /scwm/ltap,
            ls_to_conf TYPE /scwm/to_conf,
            ls_cancl   TYPE /scwm/cancl.

      FIELD-SYMBOLS: <ordim_o> TYPE /scwm/ordim_o.

      READ TABLE it_ltap_vb INTO ls_ltap INDEX 1.

  *only continue if process is confirm or cancel
      IF ls_ltap-tostat <> wmegc_to_confirmed
        AND ls_ltap-tostat <> wmegc_to_canceled.
        RETURN.
      ENDIF.

  *check for each task if it is a flow rack task
      LOOP AT it_ltap_vb INTO ls_ltap.

        me->gm_get_backbin(
          EXPORTING
            iv_frontbin =     ls_ltap-nlpla
            iv_lgtyp    =     ls_ltap-nltyp
          EXCEPTIONS
            no_flowrack = 1
            no_frontbin = 2
            OTHERS      = 3 ).

        CASE sy-subrc.
          WHEN 1.
            "regular WT - loop pass is skipped
```

```abap
              CONTINUE.

          WHEN 2.
            "Flow Rack WT – get follow-up task
            CALL FUNCTION '/SCWM/TO_READ_HU'
              EXPORTING
                iv_lgnum      = ls_ltap-lgnum
                iv_huident    = ls_ltap-nlenr
              IMPORTING
                et_ordim_o_src = lt_ordim_o_src
              EXCEPTIONS
                error          = 1
                OTHERS         = 2.

          IF lt_ordim_o_src IS NOT INITIAL.

            READ TABLE lt_ordim_o_src ASSIGNING <ordim_o> INDEX 1.

            "confirmation WT
            IF ls_ltap-tostat = wmegc_to_confirmed.

              MOVE-CORRESPONDING <ordim_o> TO ls_to_conf.
              ls_to_conf-squit = abap_true.
              APPEND ls_to_conf TO lt_to_conf.

            "cancellation WT
            ELSEIF ls_ltap-tostat = wmegc_to_canceled.

              MOVE-CORRESPONDING <ordim_o> TO ls_cancl.
              APPEND ls_cancl TO lt_cancl.

            ENDIF.
          ENDIF.

        ENDCASE.
      ENDLOOP.

*add queue for potential confirmation or cancellation tasks
      IF lt_to_conf IS NOT INITIAL OR lt_cancl IS NOT INITIAL.

        CLEAR lv_followup_queue.
        CONCATENATE 'Z_' <ordim_o>-nlpla '_FLOWRACK' INTO lv_followup_queue.

        CALL FUNCTION 'TRFC_SET_QIN_PROPERTIES'
          EXPORTING
            qin_name = lv_followup_queue.

*confirm tasks
      IF lt_to_conf IS NOT INITIAL.

        CALL FUNCTION '/SCWM/TO_CONFIRM' IN BACKGROUND TASK AS SEPARATE UNIT
          EXPORTING
            iv_lgnum = iv_lgnum
            it_conf  = lt_to_conf.

*cancel tasks
      ELSEIF lt_cancl IS NOT INITIAL.

        CALL FUNCTION '/SCWM/TO_CANCEL' IN BACKGROUND TASK AS SEPARATE UNIT
          EXPORTING
            iv_lgnum = iv_lgnum
            it_cancl = lt_cancl.

      ENDIF.

    ENDIF.
```

4.6 Optional: Considerations for Labor Management

The second task for moving the product from the back to the front bin should not be relevant for labor management as it does not require human interaction.

Consider the following steps if labor management is turned on in your warehouse:

1. You need a warehouse process type with an activity which is **not relevant** for labor management.
2. Due to the nature of LOSC, this warehouse process type has to be used every time when initially creating a warehouse task to the front bin of a flow rack.
   Note: in the end, this will be the task that maps the back-to-front-movement which you do not want to be labor-relevant. **Also consider this when setting up automatic replenishment**.
3. You need another warehouse process type which **is relevant** for labor management and will be used for putaway into the back bin.
4. This process type has to be specified during LOSC configuration under *IMG → SCM EWM → EWM → Cross Process Settings → Warehouse Task → Define Layout-Oriented Storage Process Control.*

5 Advantages Over Other Approaches

- Unlike other approaches, this configuration does not limit or interfere with any other system functionalities – for instance allowing a proper travel distance calculation or the usage of verification bins (which was limited in other approaches).
- As opposed to using POSC, it is not necessary to use special warehouse process types, the flow rack tunnels can be handled like any other storage bins.
- Comparably low configuration effort is needed, similar to setting up a regular storage type.
- Adaptive to the customer's needs in terms of specific naming conventions for storage bins or preferences about the naming of the back of the flow rack – as well regarding the treatment for handling units.

6 Limitations

- LOSC is only triggered with HU WTs, so both replenishment and putaway have to be done with whole handling units (or through homogenous stock removal, resulting in the same scenario) – While it can be configured to drop the HU after putaway – allowing stock removal of single products – the initial putaway or replenishment has to be done with HUs.
- Manual putaway into the back bin is possible, though will not result in the right procedure. Blocking putaway to the back bins completely cannot be done as it is needed for the first task to be confirmed.
- "Putaway Physical Inventory" for the front bin does not work (since the 2nd WT is confirmed automatically).
  → It is possible to use the "Low Stock Check" strategy during picking for inventory instead.