Overview of Batch Management

Purpose
Introduce the basic functionality of batch management.

Batch Master

Batch Definition

Batch management indicator:
Material Master
  - Purchasing View
  - Work Scheduling View
  - Plant data/stor 1. View

SAP Notes:
30656 - Change base unit of measure/batch management requirement
533276 - Setting the batch management requirement

Batchprocess:
Transaction Code: MSC1N/MSC2N/MSC3N (Table MCH1/MCHA/MCHB)
Check change document: MSC4N
Mass processing: MSC5N

Program:
FUNCTION VB_CREATE_BATCH
FUNCTION VB_UPDATE_BATCH
FUNCTION VB_CHANGE_BATCH

BAPIs:
BAPI_BATCH_CREATE (note 619913, item5)
BAPI_BATCH_SAVE_REPLICA (including classification >=470)

Batch Level

Function module: VB_BATCH_DEFINITION
Table: TCUCH

FAQ during batch level conversion

Batch Number Assignment
Creating Batch:

- In batch master record maintenance (Batch Management)
- In goods movement (Inventory Management)
- In purchase orders (Purchasing)
- In production/process orders (Production)
- In results recording (Quality Management)

Automatic/Manually: Control in customizing OCHA

Batch number assignment: Internal/External

User-exit:

Automatic: EXIT_SAPLV01Z_001/EXIT_SAPLV01_Z_002

Manual: EXIT_SAPLV01Z_003/EXIT_SAPLV01Z_004, EXIT_SAPLV01Z_013 and EXIT_SAPMM07M_003 (inventory management, only for new batches) can be used to change the master data of a batch.

Common information:

- Since release 470 definition for batch number assignment is transported via table TCUBN (before it was part of table TCUCH!)
- Batch numbering without gaps is impossible (for explanation see note 619913, item 6)
- Assign the same batch number for more than one goods receipt:
  - Use exit EXIT_SAPMM07M_010 (if goods movements are posted)
  - Use modification according to note 523589 for VB_CREATE_BATCH (relevant e.g. for REM - release >= 470).
    [The modification is replaced by BADI mentioned in note 1035372 - Exception BATCH_EXIST in VB_CREATE_BATCH II]
- Function modules:
  - VB_NEXT_BATCH_NUMBER (internal batch numbering)
  - VB_CHECK_BATCH_NUMBER (external batch numbering)
- Idoc type: BATMAS03
- 1970502 - Error message M3 682 when posting good movements to the same batch in parallel
- 1847487 - The Length of batch number is limited to 10 characters

Related documents:

Align vendor batch number with SAP batch number during Goods Receipt

Batch Classification

Characteristic Types in Batch Classification:

- User-defined characteristics: Characteristics that do not reference table fields
- Object Characteristics: Characteristics that refer to table fields.
- Standard characteristics: These are Batch Management characteristics that are delivered in the SAP standard system. They are reference characteristics from tables MCHA and MCH1. All standard characteristics can be found in F4 help by specifying LOBM_*}. You are normally not allowed to make
changes to standard characteristics in the characteristic master record.

One batch class per material (note 115581), but batch classification can be assigned to multiple objects (check transaction O1CL)

According to batch level class type is determined (material/client: 023, plant: 022)

Batch classification can be maintained in batch master transactions, and in several applications (goods movements, orders, process messages)

Update standard Features: BMSM

Classifying batch during goods movement: OMJJ

Tables:
Do you know the links among tables in Classification and Variant Configuration?

Classification is called in: VB_CREATE_BATCH and VB_CHANGE_BATCH

Classification FM: CLFM_OBJECT_CLASSIFICATION

User Exits to fill free characteristics:
- EXIT_SAPLV01Z_014 (not called in MB* transactions, but in MIGO!)
- EXIT_SAPMM07M_004 (called in inventory management transactions and when posting goods movements via MB_CREATE_GOODS_MOVEMENT)

Reports:
- Integrity Check for Batch Classification – BMCC
- RCCLZUOB (checks whether object exists for classification entry in table INOB - e.g. entry for temporary document number)
- RCCLINOBDEL (deletes multiple INOB entries for one object)
- RVBCOR16 (checks the customizing of batches concerning classification)

SAP Notes/KBAs:
1427890 - FAQ: Standard characteristics
1797792 - Slow performance when accessing classification data

Related documents:
Batch Class Conversion in SAP

Batch Archive
SARA:
Archiving Object MM_SPSTOCK

Pay attention on the indicator:
‘Only consider batch stock records; batch master record will not be deleted’

SNAP -> ABAP/4 snapshot for run-time errors

Batch Status Management

- Batch status management is activated via transaction OMCT.
- Batch status can be changed in batch master transaction and via usage decision (transaction QA11).
- There are two options to prevent restricted batches from being selected within batch determination:
  - insert characteristic LOBM_ZUSTD in batch class and selection class
  - work with dynamic ATP check (scope of check – OVZ9)
- Functionmodules:
  VB_CHANGE_BATCH_STATUS
  VB_CHANGE_BATCH_STATUS_STOCKS
  VB_BATCH_DEFAULT_STATUS
- Exit:EXIT_SAPLV01D_001 (determine initial status of batch)
- Fields: TCUCH-KZDZV T001W-CHAZV (batch level on plant)

Batch Determination

Batch Search Strategy Customizing

Five Scenarios

- Inventory Management
- Production order
- Process order
- Sales and distribution
- Warehouse Management

Five scenarios have similar steps to define the batch search strategy.

Five Steps in OCHA:

1. Define Condition tables: Condition tables are combinations of fields that form the key of the batch search strategy.
2. Define Access Sequences: The order in which the system accesses condition tables during batch determination.
3. Define Strategy Types: The default values used when a strategy record is created.
4. Define Search Procedure: The order in which you assign the strategy types is the order in which the system searches for strategy records.
5. Search Procedure allocation and check activation: Allocate the search procedures to the application-specific parameters. Batch determination becomes active as soon as you make the allocation.

Selection Class
Define in CL01/CL02/CL03

With the help of these selection classes, you define according to which criteria, that is, using which characteristics, batches are to be selected.

- All characteristics (this applies to standard characteristics as well as to user-defined characteristics) you want to use for selection must also be contained in the batch class. Characteristics LOBM_RLZ and LOBM_LFDAT are an exception; they can be used for selection but not for classification.
- To copy the characteristics from client 000 to your logon client, use report RMMCH01.
- 33396 - Batch determ.: Selection w. remaining life LOBM_RLZ
- 2312940 - Characteristic value of LOBM_RLZ can't be explained during batch determination

Sort Rule

Define in CU70/CU71/CU72

With the help of sort rules, you define according to which criteria, that is using which characteristics batches are to be sorted.

- All characteristics (this applies to standard characteristics as well as to user-defined characteristics) you want to use for selection must also be contained in the batch class. Characteristics LOBM_MENGE and LOBM_LGORT are an exception; they can be used for selection but NOT for classification.
- 1979691 - How to set up FIFO in batch determination

Batch Search Strategy Setup-SD

Transaction Code: VCH1/VCH2/VCH3

Set Up Batch Determination in Sales and Distribution

Batch Search Strategy Setup-PP

Transaction Code: COB1/COB2/COB3

Set Up Batch Determination in Production Planning

Set Up Batch Determination in Production Planning

When the batch determination should be done in production process.

Batch Search Strategy Setup-MM

Transaction Code: MBC1/MBC2/MBC3

Set Up Batch Determination in Inventory Management

Batch Search Strategy Setup-WM

Transaction Code: LS51/LS52/LS53

Batch determination is used for goods issues and stock transfers in SAP warehouse management systems.

- Batches to be picked are transmitted to warehouse management (batch determination takes place in upstream applications).
- Batches are determined from warehouse management (Batch determination in warehouse management).
Batch Determination Analysis

Function Module VB_BATCH_DETERMINATION

- Trouble Shooting in Batch Determination
- Debugging Point of Batch Determination
- Batch Determination – Debug Tips

User Exit
SAPLV01F

- EXIT_SAPLV01F_001
- EXIT_SAPLV01F_002

BADI
VB_BD_SELECTION

585576 - BAdI preselection of batches in batch determination

Batch input map’s

APQI Batch Input Maps, Queue info definition

APQD Queue DATA DEFINITION

Batch Information Cockpit

Basics

Transaction BMBC functions as single point of entry for batch information and comprises several transactions:
MSC2N, MSC3N, MB56, MMBE, CO09, CL30N, MB5C

Selections

- Note 619912 - FAQ: Batch Information Cockpit

Selection Result

SelectionResults: Batches

Here, the main focus is on the selected batches. The batches are displayed in accordance with the batch definition level.

SelectionResults: Stock

- Here, the main focus is on the stock situation of the selected batches.
- Following stock tables are read:
  - MCHB
    (free stock, special stock indicator = blank)
  - MKOL
    (Special stocks from vendor, special stock indicator = k)
  - MSKA
    (sales order stock, special stock indicator = E)
- **MSKU**  
  (special stocks with customer, special stock indicator = V and W)

- **MSLB**  
  (special stocks with vendor, special stock indicator = O)

- **MSPR**  
  (project stock, special stock indicator Q)

**Restrictions**

**Number of batches 50 but only 20 displayed.**

- System read all batches of material A, for example 70. User Parameter said maximum 50 batches, so system take the first 50 and send message ‘more then 50 batches found’
- Next step take 50 batches and check if they fit the selection criteria, so for example only 30 batches are displayed customer

**In the selection result of the Batch Information Cockpit you can display in all 50 characteristics, but it is limited to 20 for character types, 20 for numeric types and 10 for date and time types.**

**1701988 - Transaction BMBC - Not all characteristics are displayed in the selection result screen**

**Old batches are not displayed after upgrade to EHP5, reason is new added field BATCH_TYPE, note 12975 66 provide a report to update the old batches**

**Main Program: RVBBINCO**

**BAAd:**
  BIC_FOLLOW_UP_ACTION
  BIC_SELECTION

**Batch Derivation**

**Basic Information**

- Batch Derivation is based on batchwhere-usedlist (table CHVW and CHVW_PRE areread).
- Batch Derivation is triggered by certaine vents (transaction DVC8)
- No batch derivation for stock transfers (use exit EXIT_SAPMM07M_004 instead)

**Derivation Mode:**

- **Pull Derivation (1 Receiver, n Sender)**
  The derivation is triggered from a transaction that affects the product. Here, data from various senders can be collected, cumulated, and calculated. Within a derivation according to the pull principle, there can only be one receiver, but there can be several senders (example usage: pick and pack for pharmaceutical products).

- **Push Derivation (n Receiver, 1 Sender)**
  Within a derivation according to the push principle, there can only be one sender and several receivers. This derivation is started from a transaction that affects the component batch. Here, data from a sender batch can be derived onto several receiver batches (Example usage: Filling bulk batches in the Chemicals industry).
Customizing

Derivation events (DVC8)

- Determine at which time a derivation should happen and which rule should be used.
- Static or dynamic derivation
  - Static Derivation: For a static derivation, the attributes determined for the sender batch(es) are transferred to the receiver batch(es).
  - Static derivation is recommended if a batch is newly created or changed and the values in the receiver batch(es) should be filled with the attributes from the sender batch(es).
  - Dynamic derivation: For a dynamic derivation, no attributes are transferred to the receiver batch(es), in other words, the derivation is simulated and the values are merely displayed. The derivation is saved, but the receiver batch(es) are not automatically changed.
  - Dynamic derivation is used when the receiver batch must/should not be changed and the sender values should be used as the basis for a user decision.

Set Up Condition Technique for Derivation (Need to be set for sender and receiver both.)

- Define Condition tables
- Define Access Sequences
- Define Strategy Types
- Define Search Procedures

Derivation activate or not (DVSP)

Batch Derivation Rule

Sender Rule (DVS1)

- Which characteristic values should be used to send
- Pull or Push-Derivation

Receiver Rule (DVR1)

- how many levels of WUL should be read
- what happen if more then 1 value available which rule should be used to find the value

Details:

Set Up Batch Derivation in Production Process

Checking Derivations

Transaction DVMO

- Check and display derivations
- When you perform derivation, the following are logged:
  - Derivation type
  - Derivation event
  - Derivation status
  - Result of the derivation, as well as the sender batches and the data sent
  - Messages that arose during a derivation (for example, error messages when a derivation fails, due to a sender field
being non-valuated)

**Transaction DVMAN**

- Manually derivation for example for testing or reproducing

**Related documents:**
- Batch Derivation in Production
- Batch Derivation with BADI Derivation
- Batch Derivation Overview with example

## Shelf Life Management

**Prerequisite**

**Material Master**

View “Plant data/stor. 1”, the “Min.Rem Shelf Life” should be maintained: ŸMARA-MHDRZ

**Customizing**

- OMJ5 for plant or movement type
  - T159L-XWMHD (Plant)
  - T156-KZMHD (Movement Type)
    - check only when KZMHD = 1
    - KZMHD = 3 for goods issues (system message M7 667 moving to trash)

**Functionality for all materials not only batches!**

**Process**

- Expiration date is checked (KZMHD = 1) when goods come into the system .(goods receipts, reversals of goods issues, transfer postings)
- System prompts to enter an expiration date.
- When total shelf life is maintained in material master, system prompts for production date.
- When production/expiration date already exists (only for batches possible), these values are entered as default.
- Customizable system messages (overwriting allowed etc. in transaction OCHS)
- Expiration date stored in batch master
- Production date stored in batch master since release 4.5.
- Expiration date also stored in warehouse management (quants).
- If finer steering is needed (plant or storage location dependent values)
  - User-Exit EXIT_SAPLVBMMD_001
  - Function Module: VB_MAINTAIN_MHD
  - BADI: VB_SLED_MANAGEMENT -> called in MM07MMHD
- Notes:
  - 354914 - Documentation for EXIT_SAPLVBMMD_001

616028 - FAQ: Minimum shelf life processing

**Related documents:**
Considering component shelf life in batch determination

**Batch Specific UoM**

*Production Unit of Measure*

Notes

162925 - Documentation for product quantity
362932 - Conversion with proportion/product units

Function module: MURC_MENGENUMRECHNUNG
Postings are done in base unit.
Conversion: Function Module MATERIAL_UNIT_CONVERSION

**Related documents:**
Batch Specific UoM and Active Ingredient Management
Catch Weight Management

**Original Batch**

Original Batch