



PUBLIC

How-To: Handle Snapshot Differences

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Document History

Document Version	Description
1.0	First official release of this guide (February 2023)
1.1	SAP Note 3300062 - Ignore snapshot differences when active and inactive attribute values are equal
1.2.	Chapter Options to Prevent Snapshot Differences (July 2023)
2.0	Chapter Integration of Refresh Change Request in Master Data Updates (November 2023)

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1 Business Scenario

SAP Master Data Governance (MDG) provides business processes to find, create, change, and mark master data for deletion. It supports the governance of master data in a central hub and the distribution to connected operational and business intelligence systems.

The processes are workflow-driven and can include several approval and revision phases, and the collaboration of all users participating in the master data maintenance.

MDG offers change request (CR)-based processing of master data with integrated workflow, staging, approval, activation, and distribution.

This How-To Guide describes options on how to handle or even prevent snapshot differences.

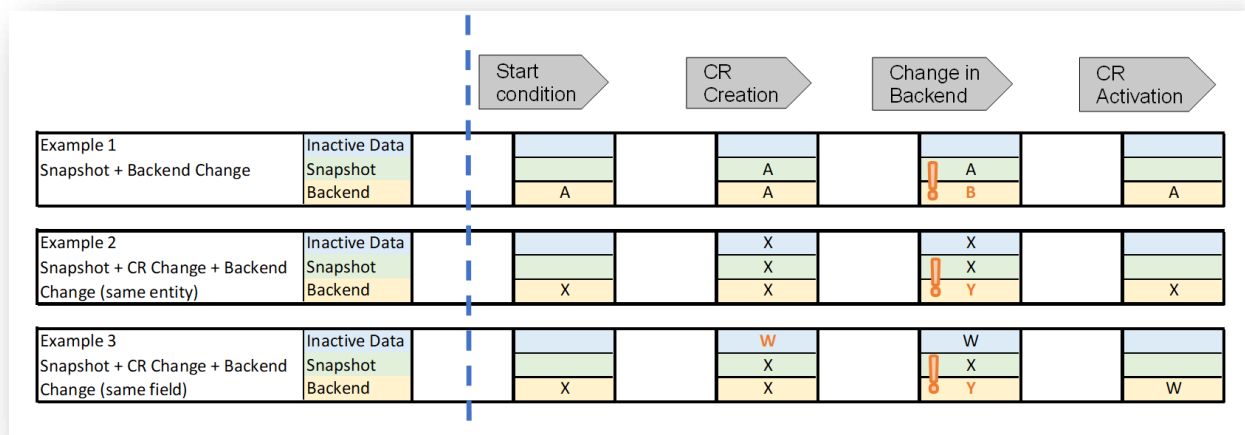
2 Snapshot and Snapshot Differences in a CR

During the creation of a change request, a snapshot for all maintained reuse entities is written. An inactive data record is written for an entity in that CR when a field of this entity is changed in the CR. With activation, the CR data is written to the backend. The CR data results from the inactive data and, if it does not exist, the snapshot of an entity.

A snapshot difference exists if the data in the active area (backend) differs from the snapshot of the active data that was taken during the creation of the change request.

Well defined data ownership is a prerequisite for governance. The governance scope defines all fields that should only be maintained using MDG, central governance. However, in some cases, changes to these fields are made directly in the backend by other processes.

If these backend changes are made while a CR is in process, these changes are overwritten when the change request is activated and if pattern 'Bypass snapshot' is used. The following is a simplified illustration of where the backend changes are overwritten:



How does the user become aware of a difference? In the *Single Object Maintenance* (SOM) UI, there is a warning message (Attribute 'XXX' changed from 'Value 1' to 'Value 2' in reuse active area) and the corresponding fields are highlighted. The mouse over on these fields display it like a user had changed the new value ('Value 2') back to the snapshot value ('Value 1').

If the CR would be activated now, the 'Value 1' would overwrite the 'Value 2'.

The screenshot shows the SAP Change Request (CR) form for Customer Details. The form is divided into sections: General Data, Address, Organizational Data, and Custom Additional Data. The 'PO Box Postal Code / PO Box' field is highlighted in yellow, showing a value change from '96001' to an empty value. The 'Tax Jurisdiction' field is also highlighted in yellow, showing a value change from '101110001' to an empty value. The 'Line of Business' is set to 'Logistic APAC'.

Section	Field	Value
General Data	Business Partner ID / Grouping	41
	Title	
	Name 1	Automobex Ltd.
	Name 2	
	Salutation	
Organizational Data	Legal Entity	Industry
	Legal Form	
	Date Founded	
	Liquidation Date	
	Authorization Group	Stakeholder: Visibility 0 (Unrestricted)
Address	House Number / Street	123 Deer Creek Road
	City / State	San Jose CA
	ZIP Code	96001
	Country/Region	US USA
	District	
Custom Additional Data	Line of Business	Logistic APAC
	PO Box Postal Code / PO Box	
	Tax Jurisdiction	
	Transportation Zone	
	Company Postal Code	

Another option is to use report `USMD_CREQUEST_SNAPSHOT_COMPARE`. The report lists the snapshot differences for one or more specified change requests. For more information, see SAP Note [2059700](#) - New report for analysing change request snapshot differences.

There are different ways to react to the message and to prevent the desired backend changes of the master data from being overwritten during the activation of the change request. These options are explained in more detail in chapter 3 Options to Handle Snapshot Differences in the Change Request.

There are also options to prevent snapshot differences. These options are explained in more detail in chapter 4 Options to Prevent Snapshot Difference.

3 Options to Handle Snapshot Differences in the Change Request

3.1 Options to Handle Snapshot Differences Before the Activation Step

There are different options for handling snapshot differences depending on the use case and the authorization of the user.

3.1.1 Using Report to Refresh the CR

You, as a key user, need to make urgent changes to master data and change the data using the backend transaction or you are made aware of a snapshot difference due to a warning message in your CR.

You can then run report `USMD_CREQUEST_SNAPSHOT_REFRESH` (SAP Note [3262032](#)) to refresh the CR snapshot and inactive data from the active data.

Check, if any open change request exists for your object and note the CR IDs. Run report `USMD_CREQUEST_SNAPSHOT_REFRESH` for your CRs. This program updates the snapshot and inactive data (if unchanged) of the change requests to avoid overwriting desired backend changes of master data during change request activation. There is no longer a snapshot difference and therefore no message will be displayed when working afterwards with these CRs.

Values in inactive data which have been changed in the change request are not updated. By definition these changes should always win at the change request activation.

3.1.2 Revert Backend Changes

You are made aware of a snapshot difference due to a message in your CR.

Check the backend change documents. Revert the change with the backend transaction. You can then process the request without getting the message. If it turns out that the backend changes were necessary after all, change the data again after activating the change request.

3.1.3 Reject the CR

You are made aware of a snapshot difference due to a message in your CR.

Review the changes in the CR and the CR change documents. Reject the CR. Create a new CR and add back the CR changes. With the new snapshot, there is no longer a difference, and the request can be approved.

3.1.4 Add the Backend Changes to the CR

You are made aware of a snapshot difference due to a message in your CR. You find out that the current value in the backend is the correct value and adjust the value on your CR UI accordingly. With SAP Note [3300062](#) – 'Ignore snapshot differences when active and inactive attribute values are equal' the snapshot difference is ignored, no message will appear anymore and you can activate the CR.

3.2 Options to Handle Snapshot Differences in the Activation Step

After the general chapter *General Information About Workflow TASK ACTIVATE CHANGE REQUEST*, you will find various options for how to handle snapshot differences in the activation step.

3.2.1 General Information About Workflow Task ACTIVATE CHANGE REQUEST

During the activation of a CR, the workflow task ACTIVATE CHANGE REQUEST (TS60808002) is used. This task initiates the activation of the change request, which means the data is transferred from the staging area to the active area. The activation fails if data consistency checks return an error (when you are using 'Do not bypass snapshot'). The system compares the data in the active area with the snapshot of the active data that was taken when the change request was created. If there is a difference, this means that there was a change of data in the active area since the change request was created. To prevent a loss of information, the activation fails, and the export parameter `SNAPSHOT_DIFF_EXISTS` returns X.

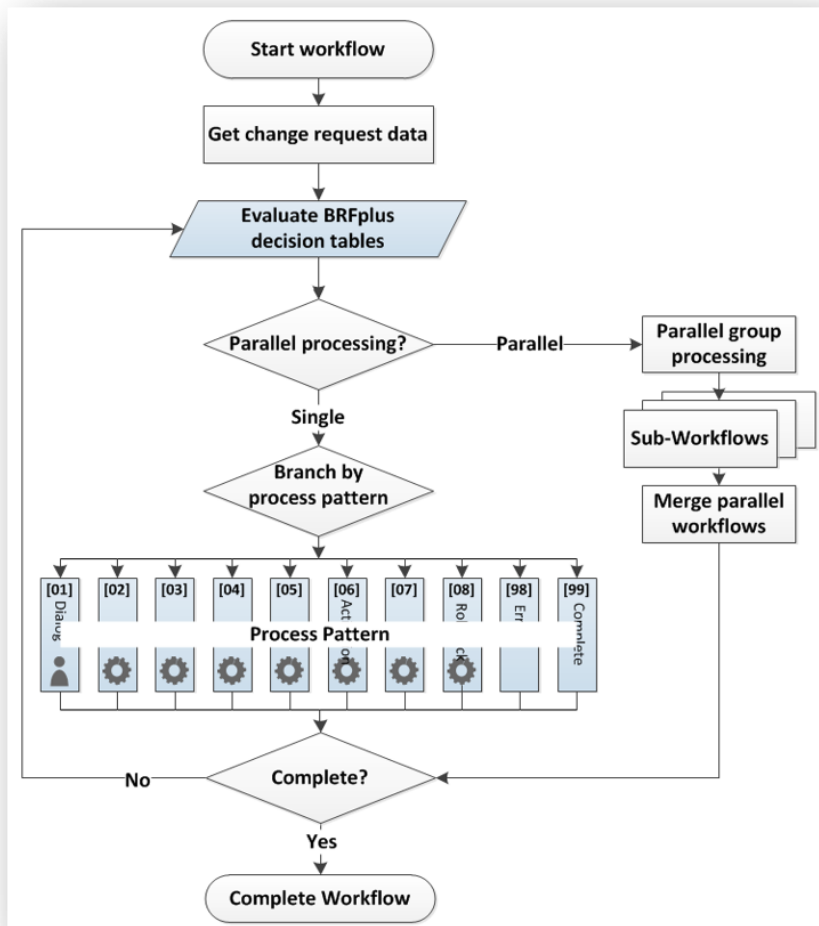
You can force the system to overwrite the active area with the data from the change request by setting the import parameter `IGNORE_SNAPSHOT_DIFF` to X ('Bypass snapshot').

This workflow task is used in the rule-based workflow template `WS60800086` and in workflow templates delivered with MDG.

Task in Rule-Based Workflow Template WS60800086

The generic workflow template (`WS60800086`) is the foundation of the rule-based workflow (RBWF). The different processes are reflected by BRFplus decision tables, which are maintained in the Customizing for each change request type.

The combination of this workflow template with the BRFplus decision tables allows you to easily set up many different processes that can be flexibly changed through Customizing.



By using different process patterns in the non-user decision table, it is determined whether the snapshot can be bypassed.

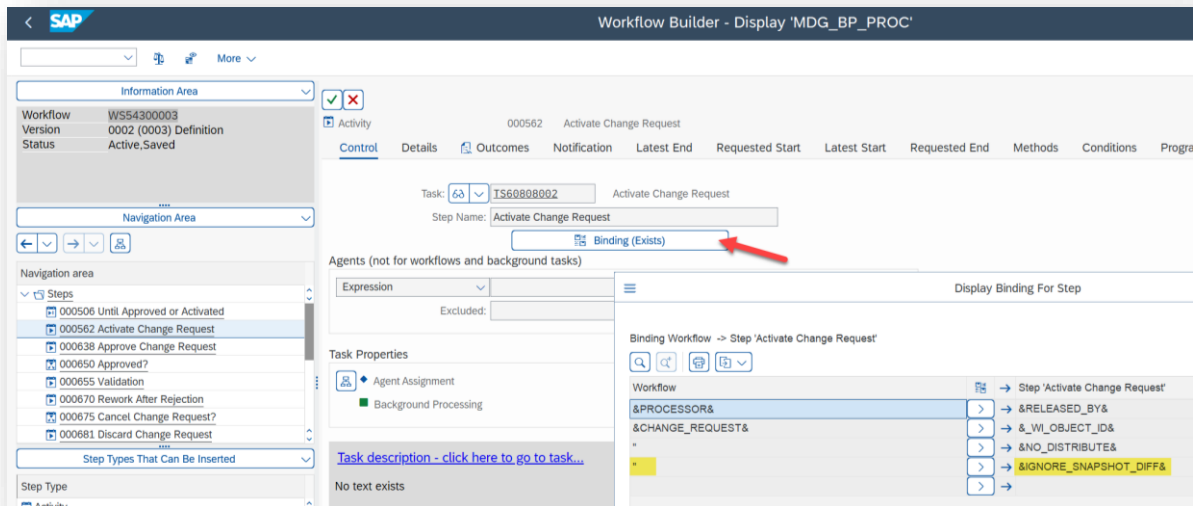
- **Process pattern [05] ACTIVATION (DO NOT BYPASS SNAPSHOT)**
This process pattern activates the data in the change request. If there are conflicting changes to the data in the standard master data tables while a change request is running, the activation fails. The process pattern uses the standard background task ACTIVATE CHANGE REQUEST (TS60808002) with an empty value for parameter `IGNORE_SNAPSHOT_DIFF`.
- **Process pattern [06] ACTIVATION (BYPASS SNAPSHOT)**
In this process pattern, the data is activated, even if the data was changed in the backend since the change request was created. Those backend changes are ignored and may be overwritten. This is done by calling the standard background task ACTIVATE CHANGE REQUEST (TS60808002) with the parameter `IGNORE_SNAPSHOT_DIFF` set to X.

For more information, see [Process Pattern](#) on the SAP Help Portal.

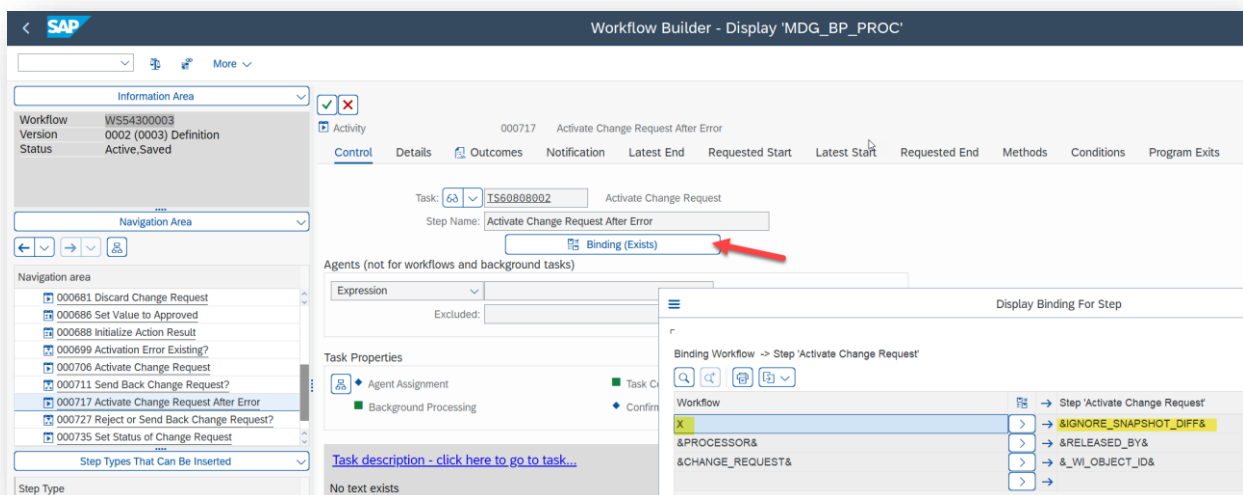
Task in Other MDG Workflow Templates

Check the binding of parameter `IGNORE_SNAPSHOT_DIFF` in the relevant activate step using ACTIVATE CHANGE REQUEST (TS60808002).

For example, see workflow template WS54300003 where the parameter IGNORE_SNAPSHOT_DIFF is not set in the step '000562 Activate Change Request' ('Do not bypass snapshot').



Parameter IGNORE_SNAPSHOT_DIFF is set in step '000717 Activate Change Request After Error' ('Bypass snapshot').



3.2.2 Using 'Do not bypass snapshot'

If your workflow uses 'Do not bypass snapshot', then changes done directly in the backend should be not allowed. The snapshot difference check recognizes that these actions are not permitted.

If the activation of a change request is not possible because it is not allowed to bypass the snapshot difference, you can have the same options as listed in chapter 3, *Options to Handle Snapshot Differences in the Change Request*

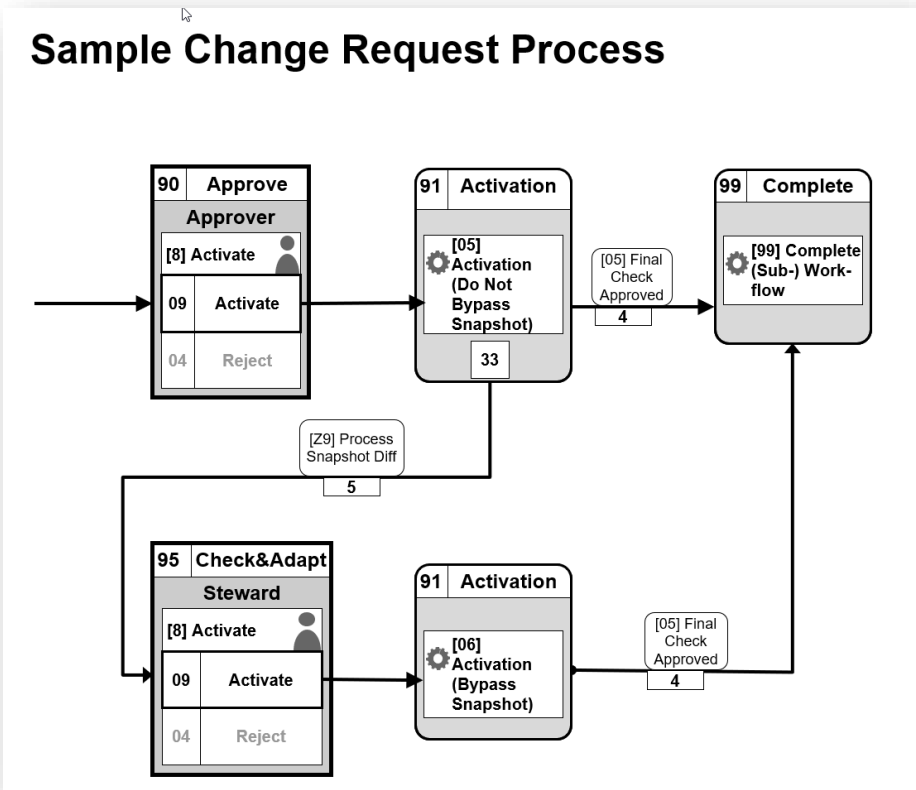
Options to Handle Snapshot Differences Before the Activation Step.

3.2.3 Using 'Bypass snapshot' and Activate the CR

It is possible to activate a CR, even if there are differences, and overwrite backend data. Before you activate, you have the option to adjust the values manually in the UI.

3.2.3.1 Using Rule-Based Workflow Template WS60800086

The delivered SAP content uses process pattern 06 ‘Bypass snapshot’ for the activation step 90. Here is an example of how to adapt the decision tables for your change request types to have the first activation step 90 with process pattern 05 ‘Do not bypass snapshot’ and a second activation step 95 with process pattern 06 ‘Bypass snapshot’.



Single Value Decision Table

Table Contents

Find: [Next](#) [Previous](#)

<input type="checkbox"/> CR Previous Step	Previous Action	Condition Al...	New Chng. Req. Step	New CR Status
<input type="checkbox"/> =00 (Processing)		1	90 (Final Check)	02 (Changes to Be Executed)
<input type="checkbox"/> =90 (Final Check)	=09 (Activate)	Z2	91 (Activation)	02 (Changes to Be Executed)
<input type="checkbox"/> =90 (Final Check)	=04 (Reject)	3	95 (Check snapshot difference and adapt data)	10 (To Revise: Perform Changes)
<input type="checkbox"/> =91 (Activation)	=31 (Activation successful)	4	99 (Complete)	05 (Final Check Approved)
<input type="checkbox"/> =91 (Activation)	=33 (Activation failed for snapshot)	5	95 (Check snapshot difference and adapt data)	Z9 (Process Snapshot Differences)
<input type="checkbox"/> =91 (Activation)	<>31 (Activation successful)	5	90 (Final Check)	11 (Process Errors After Activation)
<input type="checkbox"/> =92 (Revision)		6	99 (Complete)	06 (Final Check Rejected)
<input type="checkbox"/> =95 (Check snapshot difference and ...)	=09 (Activate)	2	91 (Activation)	02 (Changes to Be Executed)
<input type="checkbox"/> =95 (Check snapshot difference and ...)	=04 (Reject)	3	95 (Check snapshot difference and adapt data)	02 (Changes to Be Executed)

Non-User Agent Decision Table



Table Contents

Find: [Next](#) [Previous](#)

<input type="checkbox"/>	Condition Alias	Agent Group	Process Pattern
<input type="checkbox"/>	=2	001	06 (Activation (Bypass Snapshot))
<input type="checkbox"/>	=Z2	001	05 (Activation (Do Not Bypass Snapshot))
<input type="checkbox"/>	=4 ; =6	001	99 (Complete (Sub-)Workflow)
<input type="checkbox"/>	=8	001	08 (Roll Back Change Request)

After the first activation failed with an error, the key user in the step 95 has the opportunity to decide which data should be updated. The user decides if the value in the CR (here blank) or the value in the backend (here 001) is the correct value and adjusts the data in the CR. Afterwards, the user can activate the CR despite the snapshot difference. As an alternative, the key user can also run the `USMD_CREQUEST_SNAPSHOT_COMPARE` report to resolve the snapshot differences (see chapter 3.1.1, Using Report to Refresh the CR) or the other options mentioned in chapter 3.

The screenshot displays the SAP Change Request (CR) management interface. The main window shows the 'Change Request' details for Material P-050123, including the change request number (1956), description, and process data. A 'Change Request Tracker' pop-up window is overlaid, providing a detailed view of the CR's progress. The tracker table shows the following steps:

Step	Description	Status	Action	Date	Time
00	Processing	02 Changes to Be Executed	Submit	05.01.2023	15:41:56
90	Final Check	02 Changes to Be Executed	Activate	05.01.2023	15:42:15
95	Check snapshot difference and adapt data	29 Process Snapshot Differences			

3.2.3.2 Using Other MDG WF Templates

Check the following example in WF WS54300003.

The parameter `IGNORE_SNAPSHOT_DIFF` is not set in the step '000562 Activate Change Request', but the parameter `IGNORE_SNAPSHOT_DIFF` is set in the next activation step '000717 Activate Change Request After Error'.

The user in step 02, after the first activation failed, can activate the CR. As an alternative, the user can also run the report to resolve the snapshot differences (see chapter 3.1.1, Reject the CR).

Use the steps in our workflow template accordingly.

The screenshot displays the SAP Change Request Tracker (CRT) interface. The main window shows a change request with the following details:

- General Data:** Change Request: 1980, Description: Change Customer and Snapshot Difference exist, Priority: , Due Date: , Reason: .
- Process Data:** Status: Activation Failed, Current Work Item: Activate Change Request 1980 (Char...), Created On/By: 05.01.2023 16:12:09, Changed On/By: 05.01.2023 16:15:36, Type of Change Request: Process Customer, Step Type: Activate Change Request.
- Customer Details:** Business Partner ID / Grouping: 9142 Internal Number Assignment, Title: , Name 1: Org GmbH, Name 2: , Salutation: , Search Terms: CR_MASS, Legal Entity: Industry, Legal Form: Corporation, Date Founded: 05.01.1990.

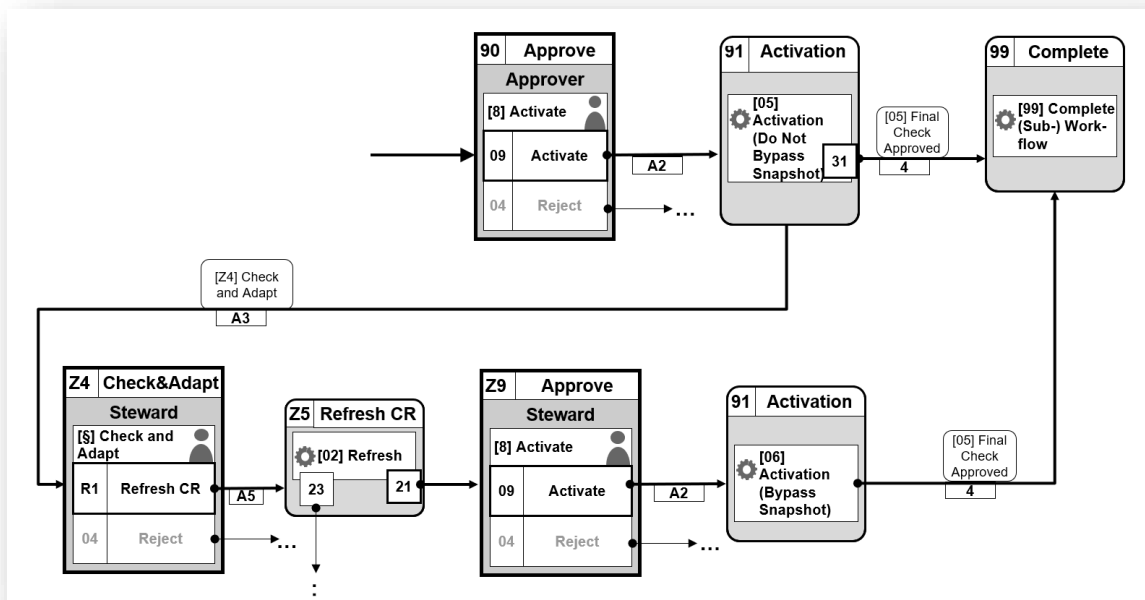
An inset window titled 'Change Request Tracker' shows a table of steps:

Step	Description	Status	Action	Date	Time
00	Submission	02 Changes to Be Executed	Submit	05.01.2023	16:05:52
01	Approval	01 To Be Considered and Approved	Approve	05.01.2023	16:06:57
02	Decision: Activation Despite Discrepancy	01 To Be Considered and Approved			

3.3 Enhance Workflow With 'Refresh CR Step'

If you do not want to check if open change requests exist and also do not want to execute report USMD_CREQUEST_SNAPSHOT_REFRESH manually, you can include method `cl_usmd_snapshot_tools=>refresh_snapshot_for_cr` in a workflow background step.

3.3.1 Using Rule-Based Workflow Template WS60800086



Here is an example how to enhance the rule-based workflow using a Business Add-In (BAI) to call the report and to adapt the decision tables for your change request types.

3.3.1.1 Create a Service Name in IMG

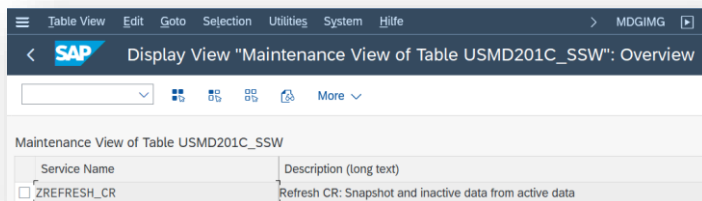
This chapter describes the definition of a service name for the rule-based workflow. It serves as BAdI filter value, and it is at the same time available for definitions in the rule-based workflow (BRFplus) for process pattern 'Synchronous System Method (02)'.

Start transaction MDGIMG. Navigate to *General Settings > Process Modeling > Workflow > Rule-Based Workflow > Configure Rule-Based Workflow > Define Service Names for Rule-Based Workflow*.

Create a new entry with the following data:

- A *Service Name* which gives the service a suitable name, here: ZREFRESH_CR
- A *Description* providing a hint about what this service does

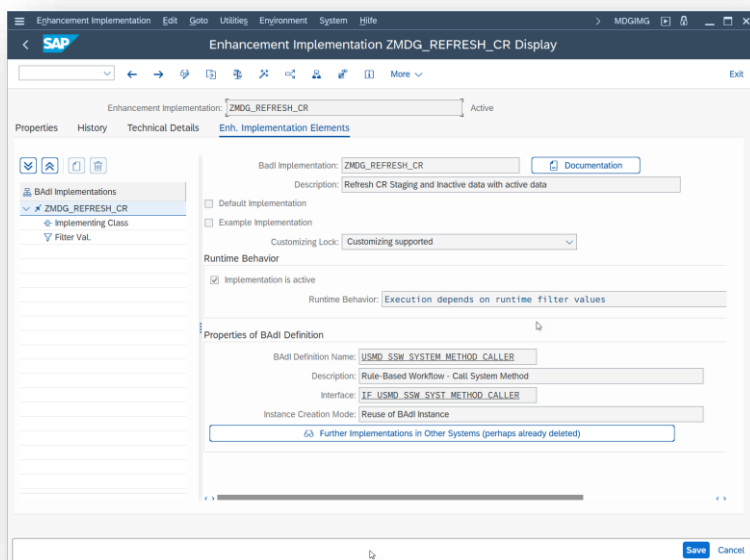
Press **Save**.

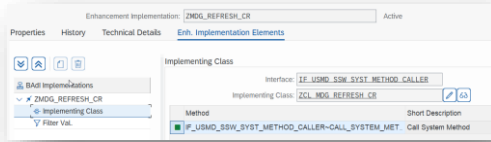
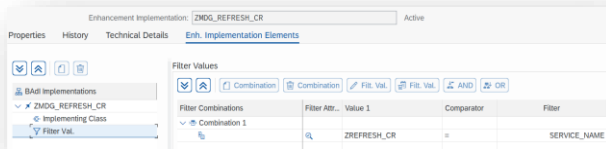


3.3.1.2 Enhancement Spot USMD_SSW_SERVICE_PROCESSOR

In this chapter a BAdI implementation for BAdI USMD_SSW_SYSTEM_METHOD_CALLER is created. It enables calling a system method in a rule-based workflow in SAP Master Data Governance. You might refer to the BAdI documentation for further details. The service name defined in a previous chapter serves as BAdI filter.

Start transaction MDGIMG. Navigate to *General Settings > Process Modeling > Workflow > Rule-Based Workflow > Business Add-Ins > BAdI: Calling of System Method for Rule-Based Workflow* or start transaction SE18. Select option *BAdI Name* and enter USMD_SSW_SYSTEM_METHOD_CALLER.





Example code:

```
METHOD if_usmd_ssw_syst_method_caller~call_system_method.
* Refresh Change Request Staging and Inactive Data from active data

"Clear the exporting parameter
CLEAR: ev_action, et_message.

"Ensure that the reference change request number is provided
IF iv_cr_number IS INITIAL.
    "Implement proper error handling here...
    RETURN.
ENDIF.

cl_usmd_snapshot_tools=>refresh_snapshot_for_cr(
    EXPORTING
        iv_change_request = Iv_cr_number
    IMPORTING
        et_message          = et_message
        ev_failed           = DATA(lv_error) ).

IF lv_error EQ 'X'.
    ev_action = '23'. ← Example action, change the example according to your
needs.
ELSE.
    ev_action = '21'. ← Example action, change the example according to your
needs.
ENDIF.

ENDMETHOD.
```

3.3.1.3 Single Value Decision Table

Table Contents				
Find:		Next	Previous	
<input type="checkbox"/> CR Previous Step	Previous Action	Condition Alias	New Chng. Req. Step	New CR Status
<input type="checkbox"/> =00 (Processing)		1	90 (Final Check)	02 (Changes to Be Executed)
<input type="checkbox"/> =90 (Final Check)	=09 (Activate)	A2	91 (Activation)	02 (Changes to Be Executed)
<input type="checkbox"/> =90 (Final Check)	=04 (Reject)	3	95 (Revision Processing)	10 (To Revise: Perform Changes)
<input type="checkbox"/> =91 (Activation)	=31 (Activation successful)	4	99 (Complete)	05 (Final Check Approved)
<input type="checkbox"/> =91 (Activation)	=>31 (Activation successful)	A3	Z4 (Check and Adapt)	07 (Activation Failed)
<input type="checkbox"/> =Z4 (Check and Adapt)	=R1 (Refresh CR)	A5	Z5 (Refresh CR)	02 (Changes to Be Executed)
<input type="checkbox"/> =Z4 (Check and Adapt)	=04 (Reject)	3	95 (Revision Processing)	02 (Changes to Be Executed)
<input type="checkbox"/> =Z5 (Refresh CR)	=21 (Successfully executed)	A4	Z9 (Final Check)	02 (Changes to Be Executed)
<input type="checkbox"/> =Z5 (Refresh CR)	=23 (Failed)	A3	Z4 (Check and Adapt)	10 (To Revise: Perform Changes)
<input type="checkbox"/> =Z9 (Final Check)	=09 (Activate)	A2	91 (Activation)	02 (Changes to Be Executed)
<input type="checkbox"/> =Z9 (Final Check)	=04 (Reject)	3	95 (Revision Processing)	10 (To Revise: Perform Changes)
<input type="checkbox"/> =92 (Revision)		6	99 (Complete)	06 (Final Check Rejected)
<input type="checkbox"/> =95 (Revision Processing)	=07 (Resubmit)	7	90 (Final Check)	02 (Changes to Be Executed)
<input type="checkbox"/> =95 (Revision Processing)	=08 (Withdraw)	8	92 (Revision)	02 (Changes to Be Executed)

3.3.1.4 User Agent Decision Table

Table Contents				
Find:		Next	Previous	
<input type="checkbox"/> Condition Alias	User Agt Grp No.	Step Type	User Agent Type	User Agent Value
<input type="checkbox"/> =1 ; =5 ; =7	001	8 (Activate Change Request)	AG (Role)	SAP_MDGM_MENU_09
<input type="checkbox"/> =3	001	8 (Activate Change Request)	AG (Role)	SAP_MDGM_MENU_09
<input type="checkbox"/> =A3	001	5 (Check and Adapt (Snapshot Differences))	US (User)	
<input type="checkbox"/> =A4	001	8 (Activate Change Request)	US (User)	

3.3.1.5 Non-User Agent Decision Table

Table Contents			
Find:		Next	Previous
<input type="checkbox"/> Condition Alias	Agent Group	Process Pattern	Service Name
<input type="checkbox"/> =2	001	06 (Activation (Bypass Snapshot))	
<input type="checkbox"/> =A2	001	05 (Activation (Do Not Bypass Snapshot))	
<input type="checkbox"/> =4 ; =6	001	99 (Complete (Sub-)Workflow)	
<input type="checkbox"/> =8	001	08 (Roll Back Change Request)	
<input type="checkbox"/> =A5	001	02 (Synchronous System Method)	ZREFRESH_CR (Refresh CR: Snapshot and inactive data from active data)

3.3.2 Using Other MDG WF Templates

Use new steps in our workflow template accordingly.

3.3.2.1 Create new Workflow Standard Task

Create a new standard workflow task (transaction `PFTC`). Use the method `cl_usmd_snapshot_tools=>refresh_snapshot_for_cr`. Select *Synchronous Object Method* and *Background Processing*.

In addition, maintain the binding between the method parameter `IV_CHANGE_REQUEST` and a new task parameter of the same name.

Save the task. Then set the flag 'Synchronous object method' and save again.

3.3.2.2 Copy or Enhance Workflow Template

Copy or enhance the workflow template that you are using and for which you want to change the behavior.

Add the new workflow task after the dialog step where the workflow is after activation, which failed due to snapshot differences. Maintain the binding between the new parameter `IV_CHANGE_REQUEST` of the workflow task and the existing parameter `CHANGE_REQUEST.CREQUEST` from the workflow container. Maintain additional dialog steps to check the result of the report.

4 Options to Prevent Snapshot Difference

4.1 Check for Existing CR in Consolidation or Mass Processing

To prevent snapshot differences that might occur with activation when using consolidation or mass processing, you can use validation rules.

With validation rules, you can collaboratively describe, catalog, and implement rules for data quality using a central rule repository. These validation rules can be used for data quality evaluations and for checking data in change requests, in consolidation and in mass processing for products and business partners. More information about validation rules can be found [here](#). See also [How To Guides](#) for Data Quality Management for more details how to create validation rules.

The following example shows how to use a validation rule to check for open change requests in the validation step of a mass processing process. If an open CRs for an object exist you can remove this object, move it to another process, or close the CR.

4.1.1 Validation Rule

Create a validation rule for base table Basic Data (MARA) and usage 'Check in Mass Processing'. Create a meaningful error message, message severity 'Error' and assign it to the rule.

The screenshot shows the SAP 'Validation Rules for Products' configuration page for the rule 'MAT_IN_CR'. The rule description is 'Open Change Request exists for Material'. The base table is 'Basic Data (MARA)' and the checked field is empty. The status is 'Approved'. The page has tabs for General Information, Usage, Implementation, Message, Simulations, Dimensions, Additional Information, and Administrative Data. The 'Usage' tab is active, showing a table with one entry: 'Check in Mass Processing' with status 'Enabled' and a 'Disable' button. The 'Implementation' tab shows the scope expression 'MAT_IN_CR_SCP' and condition expression 'MAT_IN_CR_CON', both active. The 'Message' tab shows a predefined text message: 'Open change request exists for material <MARA-MATNR>', with severity 'Error'.

Validation Rules for Products

MAT_IN_CR
Open Change Request exists for Material

Base Table: Basic Data (MARA) Status: **Approved**
Checked Field: --

General Information Usage Implementation Message Simulations Dimensions Additional Information Administrative Data

Business Details

Business Description: Open Change Request exists for Material. Close CR or remove Material from Process.
Business Reason: --
Scope: --
Link: --

Contacts

Rule Owner: --
Implementation Expert: --
Business Contact: --
Data Owner: --

Usage

Standard ▾

Usage	Status	Usage Action
<input checked="" type="radio"/> Check in Mass Processing	Enabled	Disable

Implementation

Scope

Expression: MAT_IN_CR_SCP
Status: Active

Condition

Expression: MAT_IN_CR_CON
Status: Active

Message

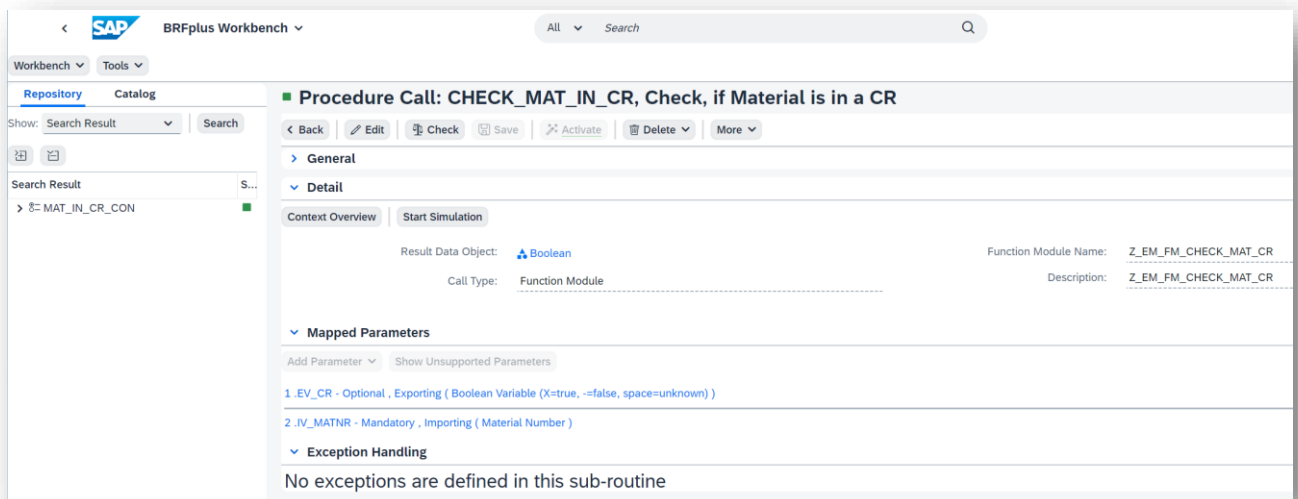
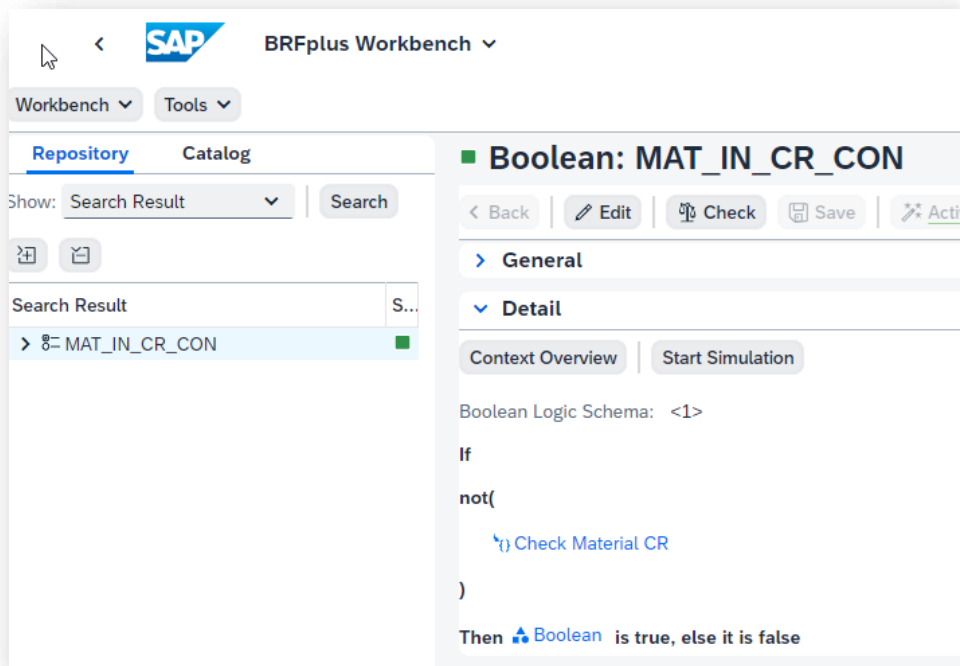
☐ Default Text
☒ Predefined Text

Short Text: Open change request exists for material <MARA-MATNR>
Long Text: Show Long Text
Message Severity: **Error**

Message Class: ZMDQ_DEMO
Message Number: 001
Message Variable 1: MARA-MATNR
Message Variable 2: --
Message Variable 3: --
Message Variable 4: --

Maintain a suitable scope for materials, where a CR could exist.

Then create the condition expression, using a procedure call with type function module.



Coding example for the function module for material:

```
FUNCTION z_em_fm_check_mat_cr.
* "-----
* " "Local Interface:
* "   IMPORTING
* "       REFERENCE(IV_MATNR) TYPE MATNR
* "   EXPORTING
* "       REFERENCE(EV_CR) TYPE BOOLEAN
* "-----

"Initialize the exporting parameter (default: no open change requests)
CLEAR ev_cr.
```

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```

"Check the importing parameter
IF iv_matnr IS INITIAL.
    RETURN.
ENDIF.

"Get the External Model API
cl_usmd_model_ext=>get_instance(
    EXPORTING
        i_usmd_model = 'MM'
    IMPORTING
        eo_instance = DATA(lo_model_ext)
        et_message = DATA(lt_message) ).
IF lo_model_ext IS INITIAL OR lt_message IS NOT INITIAL.
    "...suitable error handling here...
    RETURN.
ENDIF.

"Create a table for the Material entity type
lo_model_ext->create_data_reference(
    EXPORTING
        i_fieldname = 'MATERIAL'
        i_tabtype = if_usmd_model_ext=>gc_tabtype_sorted
    IMPORTING
        er_data = DATA(lr_materials)
        et_message = lt_message ).
IF lt_message IS NOT INITIAL.
    "...suitable error handling here...
    RETURN.
ENDIF.
FIELD-SYMBOLS <lt_materials> TYPE SORTED TABLE.
ASSIGN lr_materials->* TO <lt_materials>.

"Create a structure for the Material entity type
DATA lr_material TYPE REF TO data.
CREATE DATA lr_material LIKE LINE OF <lt_materials>.
ASSIGN lr_material->* TO FIELD-SYMBOL(<ls_material>).

"Insert the provided material ID into the materials table
ASSIGN COMPONENT 'MATERIAL' OF STRUCTURE <ls_material> TO FIELD-
SYMBOL(<lv_material>).
<lv_material> = iv_matnr.
INSERT <ls_material> INTO TABLE <lt_materials>.

"Get all open change requests with respect to the provided material
lo_model_ext->if_usmd_model_cr_ext~retrieve_crs_by_object_keys_db(
    EXPORTING
        iv_object_type = 'MATERIAL'
        it_object_key = lr_materials
        it_cr_status_sel = VALUE #( ( fieldname = usmd0_cs_fld-crequest_status
                                     sign = 'E'
                                     option = 'BT'
                                     low = usmd0_cs_crequest_status-
                                     high = usmd0_cs_crequest_status-
                                     finally_approved
                                     finally_rejected ) )
    IMPORTING
        et_crequest_id = DATA(lt_crequest_id)
        et_message = lt_message ).
IF lt_message IS NOT INITIAL.

```

```

    "...suitable error handling here..."
    RETURN.
ENDIF.

IF lt_crequest_id IS NOT INITIAL.
    ev_cr = abap_true.
ENDIF.

ENDFUNCTION.

```

For more information see ['Example: Implementing Rules with Extra Data Provisioning \(Products\)'](#) and ['Implementing Validation Rules with Extra Data Provisioning'](#).

Make sure, that the newest version of `lo_model_ext->if_usmd_model_cr_ext~retrieve_crs_by_object_keys_db` is available in your system.

Therefore check, that following SAP Notes are available in your system:

3335502	Extend the External Model API by a method to search for change requests
3252274	Prevent the Creation of Mapping Entries when Reading CRs (1)
3230315	Prevent the Creation of Mapping Entries when Determining CRs
3164787	Short Dump OBJECTS_WA_NOT_COMPATIBLE when retrieving CRs by Object Keys
2779504	MDG Customer Connect: "MDG Out of the box application to search CRs by business data"

4.1.2 Mass Processing/Consolidation Settings

Create a new or enhance your relevant process template. Make sure that *Apply Validation Rules* is switched on in the validation configuration for this template.

Change View "Master Data Consolidation: Configurations f.": Details

New Entries | BC Set: Change Field Values

Configuration ID: VAL_TST_DQ

Master Data Consolidation: Configurations for Validation

Description: Validation DQ Rules

No of Processes:

Queue Prefix:

☒ Apply Validation Rules

☐ Execute Change Request Checks

☐ BRF+ Checks

☐ Write MDQ Worklist

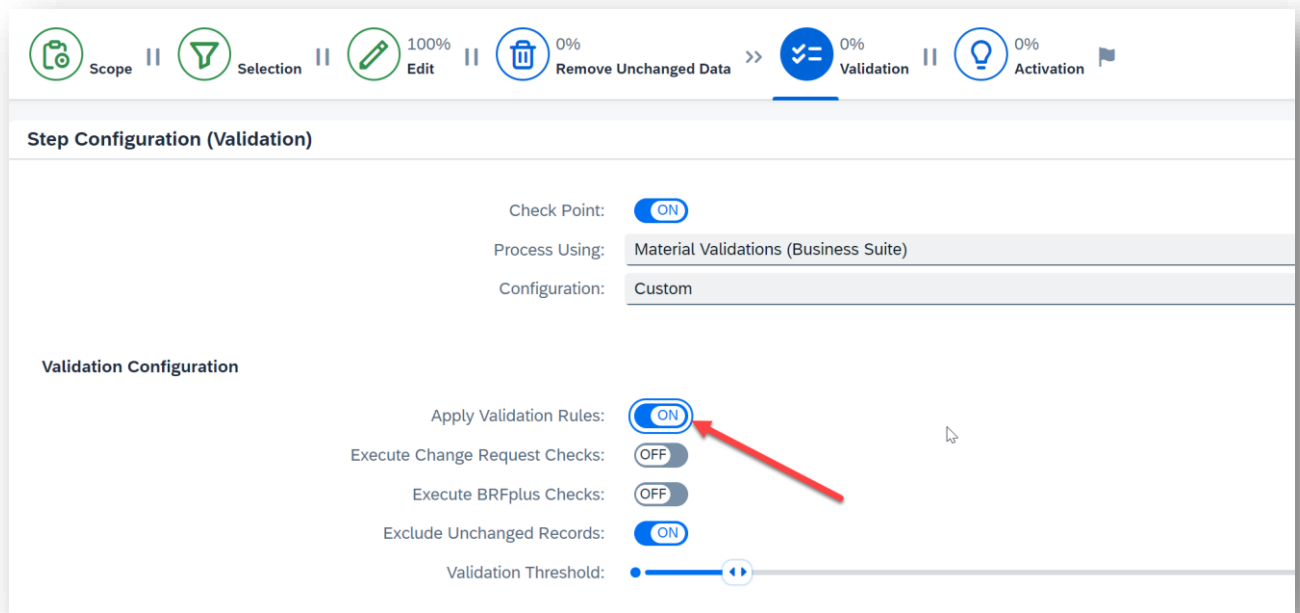
☐ Remove Unchanged Rec

Threshold (%):

Step Scheduling

Minimum Number of Records:

In addition, you can check and change this setting directly in the process UI for consolidation and mass processing.



Step Configuration (Validation)

Check Point: ☒ ON

Process Using: Material Validations (Business Suite)

Configuration: Custom

Validation Configuration

Apply Validation Rules: ☒ ON

Execute Change Request Checks: ☐ OFF

Execute BRFplus Checks: ☐ OFF

Exclude Unchanged Records: ☒ ON

Validation Threshold:

4.1.3 Result

The message is raised during the validation step. You can remove this object, move it to another process, or close the CR.

Mass Processing

Process ID: 1510

2
Selected Records

Stopped for Review (Validation)

75%

100% Remove Unchanged Data >> 100% Validation || 0% Activation

Results (Validation) Show Result

1 Errors 0 Warnings

Step Information

Excluded Unchanged Records: 0

Updates

Number of Records

Validation Status

Success

Warning

Error

1

1

Continue Retry Rollback Save Delete Show Audit Trail

Open change request exists for material P-24052023.

Diagnosis

Open change request exists for material P-24052023

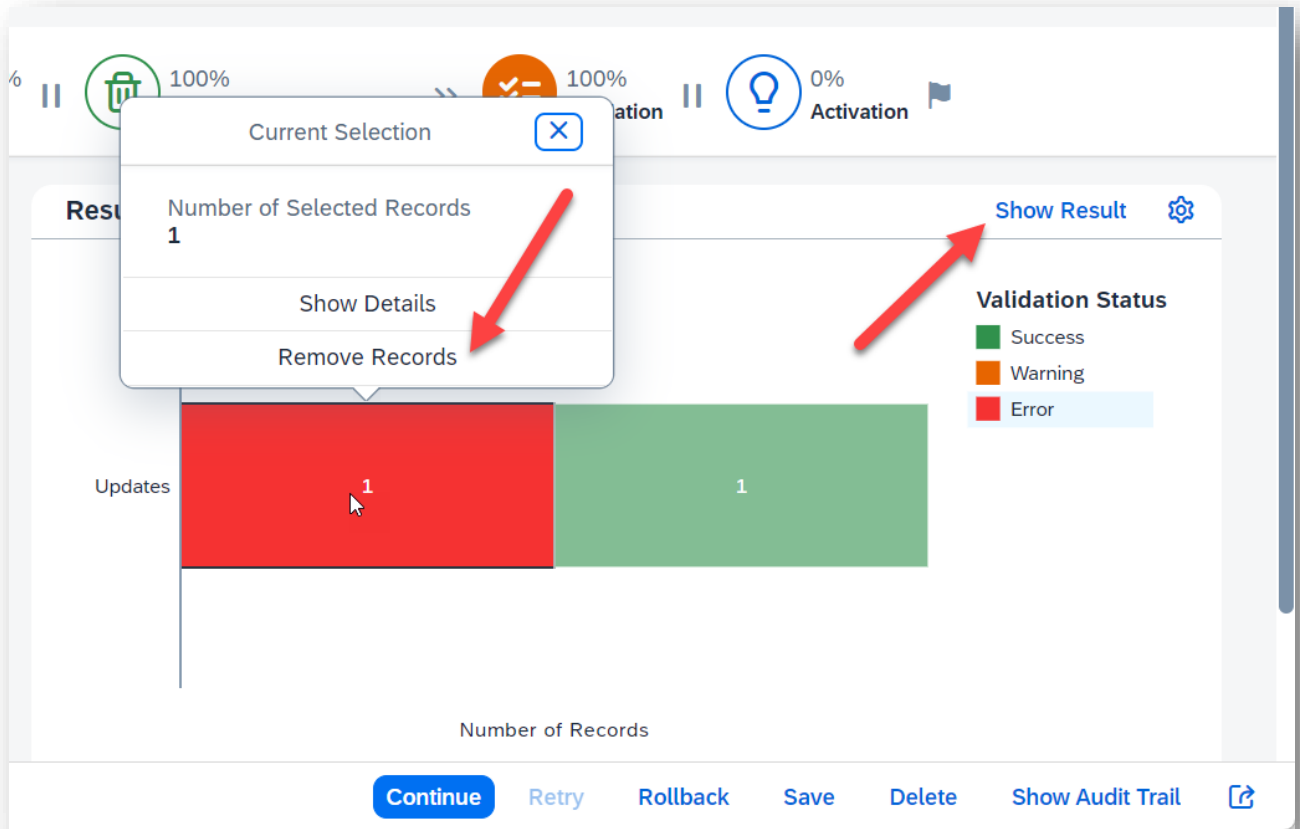
Procedure

Remove the material from the process or finalize the change request.

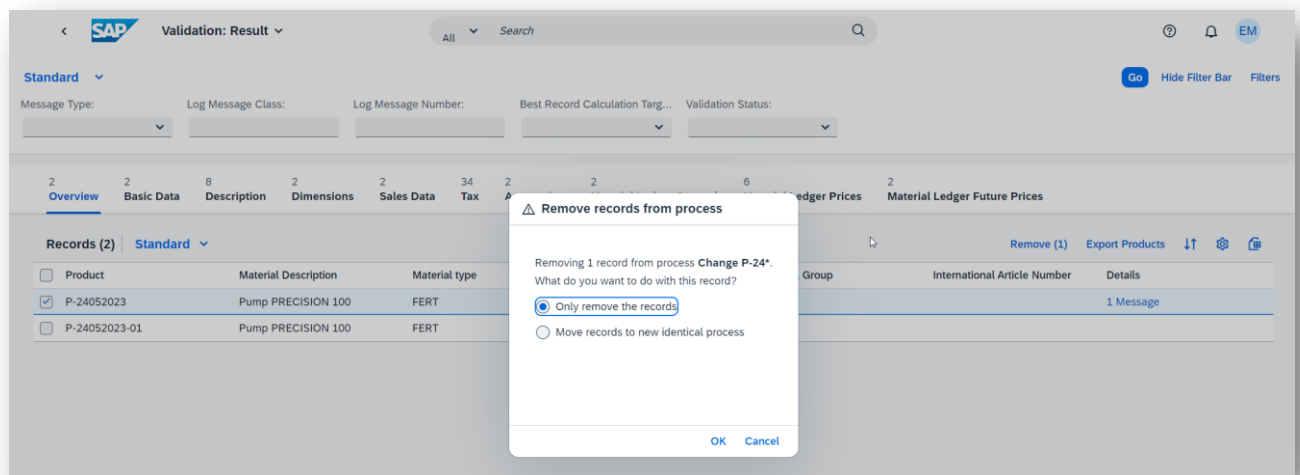
Message No. ZMDQ_DEMO001

Show Result

You can remove the material or move it to a new identical process by clicking on the red error bar.



Or from the Validation Result list.



Then you can activate.

If you rule has only severity warning, you can activate without removing. You can solve the snapshot differences for example with 3.1.1 Using Report to Refresh the CR.

4.2 Integration of Refresh Change Request in Master Data Updates

With S/4HANA 2023 FSP1 or SAP Notes [3391808](#), [3391656](#), [3342330](#) there is an option to set up the integration of refresh change request in master data updates (see also chapter 3.1.1 Using Report to Refresh the CR). A refresh of existing open change requests (snapshot and inactive data) is then triggered automatically after master data updates for material and business partner.

It ensures that backend changes on master data objects are not overwritten during change request activation so that intended backend changes as well as changes using a change request are compatible and consistent. Because of the refresh, there is no longer a snapshot difference and therefore no message will be displayed when working afterwards with these change requests.

4.2.1 Prerequisites

The change request refresh functionality on object level uses the bgRFC functionality. For more information about bgRFC, see SAP Help [bgRFC \(Background Remote Function Call\)](#).

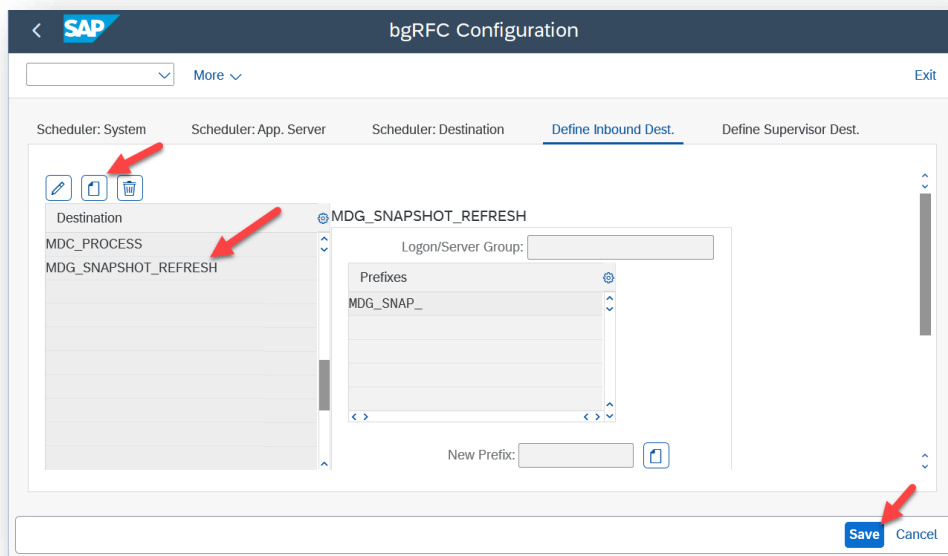
The following configuration is a prerequisite:

1. Run transaction **SBGRFCCONF**.
2. On the *Define Inbound Dest.* tab, choose Create.
3. In the Configure Inbound Destination pop-up, enter the following and then choose Add and Save:

Inbound Destination Name: MDG_SNAPSHOT_REFRESH

Add Queue Prefixes: MDG_SNAP_

4. In the main screen of the **SBGRFCCONF** transaction, save your changes.

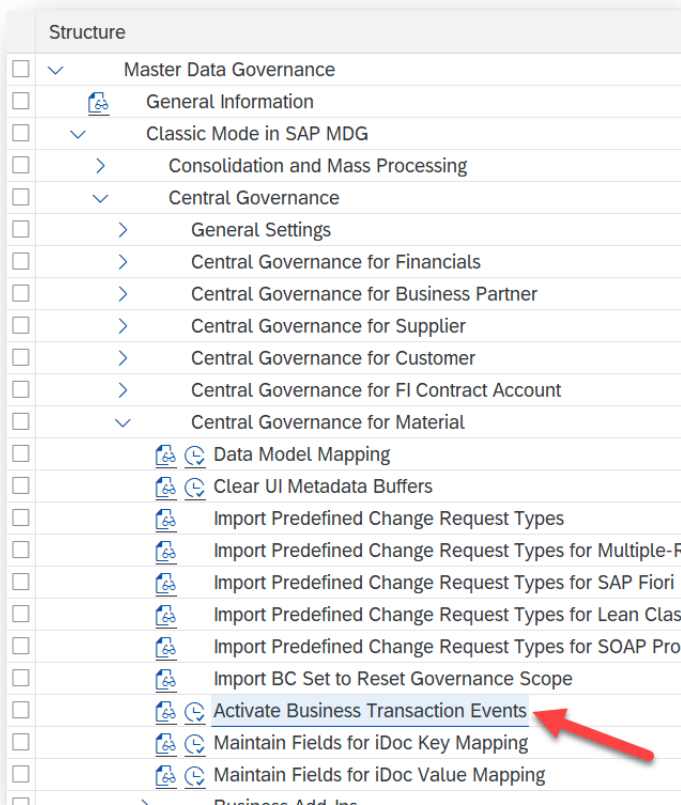


For information on how to maintain non-default scheduler settings for the inbound destination, see the configuration steps described in the SAP Help [bgRFC Configuration](#).

Note: To monitor background processing, you can use transaction SBGRFCMON.

4.2.2 Procedure for Material

To set up the integration, run transaction MDGIMG. Navigate to Classic Mode in SAP MDG -> Central Governance -> Central Governance for Material -> Activate Business Transaction Events and select the checkbox for the *MDGCRU* application.



Appl.	A	To
<input type="checkbox"/> MDGCRU	<input checked="" type="checkbox"/>	Change Request Update
<input type="checkbox"/> MDGM	<input checked="" type="checkbox"/>	MDG Material

4.2.3 Procedure for Business Partner/Supplier/Customer

To set up the integration, run transaction BUPA_CALL_FU or Customizing activity Activate Function Modules under Cross-Application Components -> SAP Business Partner -> Data Distribution -> Activate Function Modules.

Select the checkbox for the Event *BPOUT* Business Partner Outbound for Object *BUPX* Business Partner and BP Relationship with Item *5500001* and Function module name *MDG_BS_BP_SNAPSHOT_UPD*.

If this entry does not exist, create it manually with the following values:

Event: BPOUT Business Partner Outbound

Object: BUPX Business Partner and BP Relationship

Item: 5500001

Function module name: MDG_BS_BP_SNAPSHOT_UPD

Select the checkbox in column *Call* so that the function module is activated.

Data Exchange: Activation of Function Modules					
	Event	Object	Item	Function module	Call
<input type="checkbox"/>	BPOUT Business...	↓ BUPX Business Partner and BP R...	↓ 5500001	MDG_BS_BP_SNAPSHOT_UPD	<input checked="" type="checkbox"/>
<input type="checkbox"/>	CLEAR Deletio	↓ BUPA Business Partner	↓ 0100000	COM_BUPA_MWX_CLEAR_FLAGS	<input checked="" type="checkbox"/>

5 Additional Information

See also other [How To Guides for Workflow](#).

5.1 Further Reading

5.1.1 Information on SAP MDG on SAP S/4HANA

- Exchange knowledge: [SAP Community](#) | [Q&A](#) | [Blog](#)
- Try SAP Master Data Governance on S/4HANA for free: [Trial Version](#)
- Try SAP Master Data Governance on S/4HANA on the SAP Cloud Appliance Library: [S/4HANA 2022 FPS1](#)
- Learn more: [Latest Release](#) | [Help Portal](#) | [How-to Information](#) | [Key Presentations](#)

5.1.2 SAP Roadmap Explorer

- Please see the [roadmap for SAP Master Data Governance](#)

5.1.3 Related Information

- Learn more: [Floorplan Manager for Web Dynpro ABAP](#) | [How to Adapt FPM](#) | [FPM Blog](#) | [How-to Information](#) | [Service Mapping Tool](#) | [SAP S/4HANA Cookbook CVI](#)

5.2 SAP Notes

In addition to the detailed explanations written in this document, please see the following SAP Notes for further important information.

Note	Description
3391808	Refresh Change Request in Master Data Updates
3391656	MDG-BP/C/S: Integration of Refresh Change Request in Master Data Updates
3342330	MDG-M: Integration of Refresh Change Request in Master Data Updates
2063542	Function for updating snapshot
3262032	Extension of Snapshot Refresh Functionality
2059700	New report for analyzing change request snapshot differences
3300062	Ignore snapshot differences when active and inactive attribute values are equal
3335502	Extend the External Model API by a method to search for change requests
3252274	Prevent the Creation of Mapping Entries when Reading CRs (1)
3230315	Prevent the Creation of Mapping Entries when Determining CRs
3164787	Short Dump OBJECTS_WA_NOT_COMPATIBLE when retrieving CRs by Object Keys
2779504	MDG Customer Connect: "MDG Out of the box application to search CRs by business data"
2221398	MDG-BP/C/S/CA: (Un-)Supported Fields in Data Model BP

2847807	MDG-BP/C/S/CA: Usage of MDG Tools and Processes
2313368	Functional restrictions in MDG for Business Partner / Customer / Supplier with SAP Master Data Governance 9.0
2472845	Functional restrictions in MDG for Business Partner / Customer / Supplier with SAP Master Data Governance 9.1
2656712	Functional restrictions in MDG for Business Partner / Customer / Supplier in SAP Master Data Governance 9.2 and on SAP S/4HANA 1809
2816557	Functional restrictions in MDG for Business Partner / Customer / Supplier on SAP S/4HANA 1909
2925030	Functional restrictions in MDG for Business Partner / Customer / Supplier on SAP S/4HANA 2020
3070003	Functional restrictions in MDG for Business Partner / Customer / Supplier on SAP S/4HANA 2021
3220117	Functional restrictions in MDG for Business Partner / Customer / Supplier on SAP S/4HANA 2022
3194967	MDG Customer Connection 2021 for S/4HANA 2022
3043582	MDG Customer Connection 2020
3134600	MDG-M: Supported fields in Data Model MM
1806108	Functional restrictions in MDG-M in MDG7 (incl. SP02)
2129261	Functional restrictions in MDG-M in MDG8
2284745	Functional Restrictions in MDG for Material with SAP Master Data Governance 9.0
2461516	Functional Restrictions in MDG for Material with SAP Master Data Governance 9.1
2656693	Functional Restrictions in MDG for Material in SAP Master Data Governance 9.2 and on SAP S/4HANA 1809
2816571	Functional Restrictions in MDG for Material on SAP S/4HANA 1909
2948873	Functional Restrictions in MDG for Material on SAP S/4HANA 2020
3070012	Functional Restrictions in MDG for Material on SAP S/4HANA 2021
3219945	Functional Restrictions in MDG for Material on SAP S/4HANA 2022
2479869	Usage of Lean Classification with SAP Master Data Governance
1619534	How to Create, Enhance and Adapt FPM Applications
1637249	MDG: Information for efficient message processing
2105467	MDG Performance
2561461	Scope of support for SAP Master Data Governance (MDG)