

SAP EM – How to Search for Multiple Event Handler Types in One Tracking Scenario

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SUMMARY

It may be reasonable to integrate event handlers of several event handler types into one tracking scenario. This makes it necessary to search for these several event handler types. Two different options to achieve this are described in this document:

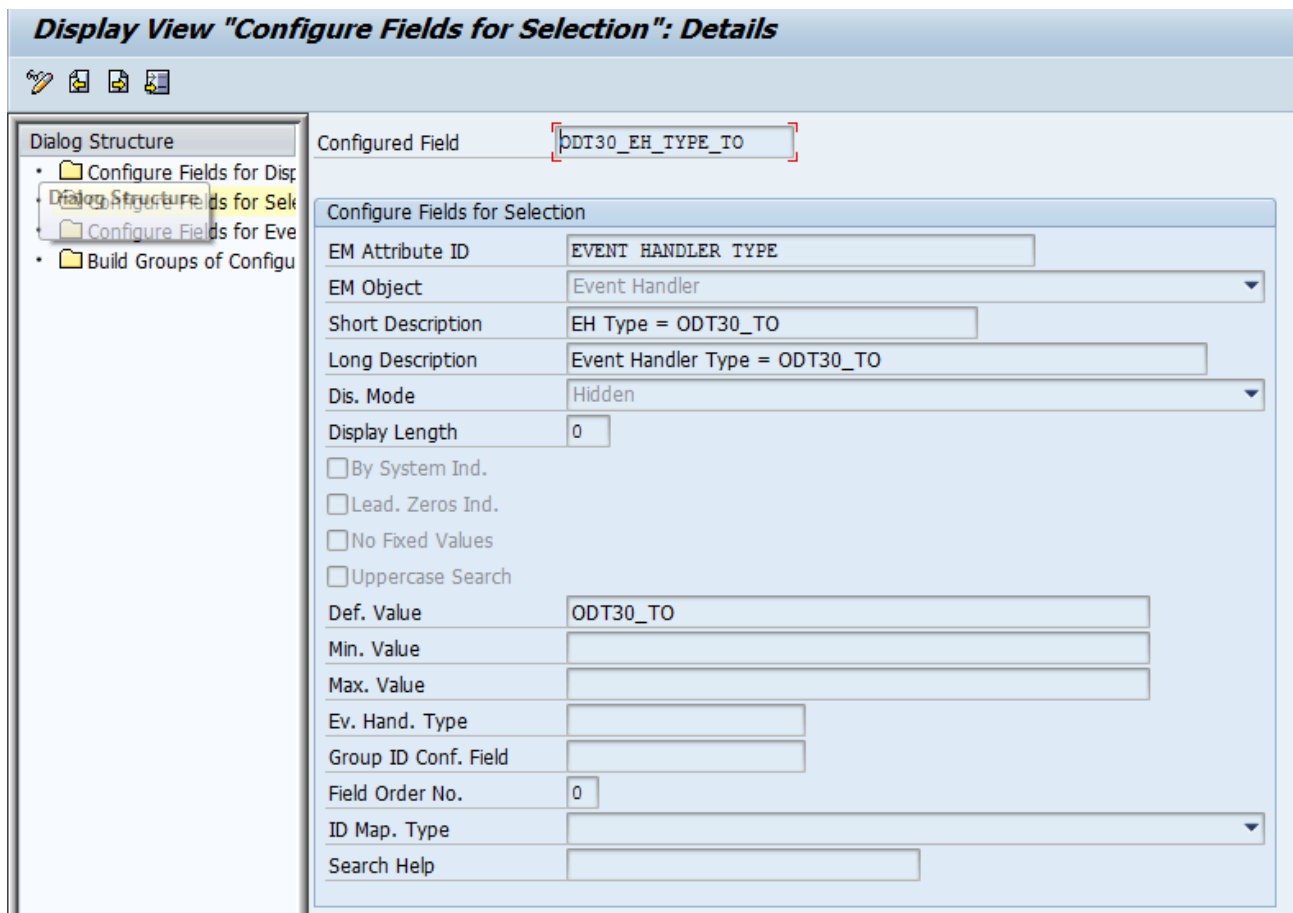
- Using the standard search function (customizing only) -> can be performance critical
- Using custom search function (customizing and coding) -> better performance, but some prerequisites have to be met

Moreover it is described how the display profile that is used to display the event handler details is determined dynamically at runtime in an enhancement.

SEARCH FOR MULTIPLE EVENT HANDLER TYPES USING STANDARD SEARCH FUNCTION

To search for multiple event handler types in one tracking scenario you can add simply multiple hidden configured fields for selection that refer to the EM attribute ID “EVENT HANDLER TYPE” to the selection profile.

In each of these hidden configured fields enter the event handler types in “Def. Value”. Normally a selection profile consists of only one such a configured field to search for exactly one event handler type.



But this solution has a major drawback, because it is very performance intensive. For each event handler type that is included in the search like this, a separate SELECT will be executed on the database.

SEARCH FOR MULTIPLE EVENT HANDLER TYPES USING CUSTOM SEARCH FUNCTION

In SAP EM it is possible to define a custom search function. If you define a custom search function, you can achieve that the search for multiple event handler types requires only one SELECT on the database – at least if the following prerequisites are met:

- All the event handler types that are part of the search use the same event handler extension table
- All the event handler types that are part of the search use the same event message extension table

The custom search function can be defined with IMG activity *Define Special Search Functions for Event Handler Data* (path: SPRO -> Event Management -> General Settings in SAP Event Management -> Functions, Conditions, and Activities in SAP Event Management). To use it as the standard search function of the SAP EM Web UI the user field has to stay empty.

EH Special Data Query Function		
User	Function Module Name	Description
	Z_UC_WDA_RETRIEVE_GUIDS	Search for multiple EHTypes with one SELECT

In the standard the FM /SAPTRX/UC_WDA_RETRIEVE_GUIDS is called from the EM Web UI to execute the search. Therefore it is recommended to copy this FM (e.g. to Z_UC_WDA_RETRIEVE_GUIDS) and enter this new one in the above described customizing.

Inside this FM then only one statement has to be changed. The call of the FM /SAPTRX/EH_RETRIEVE_GUIDS has to be changed to another new function module, you should create as a copy of /SAPTRX/EH_RETRIEVE_GUIDS (e.g. Z_EH_RETRIEVE_GUIDS). Ensure that all the constants and subroutines, which are used in /SAPTRX/EH_RETRIEVE_GUIDS, are also available for your new FM. The coding should be changed regarding the following points (**NO GUARANTEE OF CORRECTNESS OR COMPLETENESS**):

- The different EH Types have to be added as selection criteria just before the loop on lt_eh_type
- In table lt_eh_type only one EH type shall remain (can be any) -> this will lead to only one SELECT

```
....
lt_selection[] = it_selection[].
  LOOP AT lt_eh_type INTO l_eh_type.
    ls_eh_type_range-sign = 'I'.
    ls_eh_type_range-option = 'EQ'.
    ls_eh_type_range-low = l_eh_type.
    INSERT ls_eh_type_range INTO TABLE lt_eh_type_range_tab.
  ENDLOOP.
  ls_selection-field_id = 'EH_TYPE'.
  ls_selection-field_type = co_ft_event_handler.
  ls_selection-value_range_tab = lt_eh_type_range_tab.
  INSERT ls_selection INTO TABLE lt_selection.
* Leave one eh type entry in the eh type table -
> only one select will be done
  CLEAR lt_eh_type.
  INSERT l_eh_type INTO TABLE lt_eh_type.
* -----
* step 2 loop over event handler types.
  LOOP AT lt_eh_type INTO l_eh_type.
.....
```

- New subroutines have to be created to build the where-clause (as copy of subroutines build_whereclause_fast_search, build_whereclause_evm, build_whereclause_new)

Example: Changed part of copy of build_whereclause_fast_search:

```
....  
LOOP AT p_selection INTO ls_selection.  
  
    lv_counter = lv_counter + 1.  
  
    IF lv_counter <> 1.  
        CONCATENATE lv_where 'AND' INTO lv_where SEPARATED BY space.  
    ENDIF.  
  
    CASE ls_selection-field_type.  
....
```

- Remove eh_type from selects

DYNAMIC DETERMINATION OF DISPLAY PROFILE FOR DISPLAY OF EH DETAILS

If different event handlers are used in one tracking scenario it might be desirable to use different display profiles to display the event handler details of each event handler type.

This can only be achieved via an enhancement. Method ENHANCE_UP_TABLES of class /SAPTRX/CL_EM_WDA_UI can be enhanced with an overwrite enhancement. Inside the method the display profile can be determined that shall be used (e.g. based on the event handler type) and has to be written to CS_USER_PROF-DP_ID. It has to be ensured that details for this display profile are available in the global tables of the web dynpro component. The details can be read via FM /SAPTRX/UC_GET_USERPROFILE. This method is available with SAP EM 9.0 SP02. Alternatively you can implement note 1768417.

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