

# Analysis Authorization Using Variable Exits



## Applies to:

SAP NetWeaver Business Intelligence, will work on SAP BI 7.0. For more information, visit the [EDW homepage](#).

## Summary

This paper is about Analysis authorization concept using variable customer exits in reporting.

**Author:** Nithesh Prakash

**Company:** HP Global Soft Pvt Ltd.

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## Author Bio



Nithesh Prakash is a SAP BI Consultant currently working with HP Global Soft Pvt Ltd (Bangalore/ INDIA). He has about 3 years of full time experience in SAP BI/BW.

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## Introduction:

Dynamic analysis authorization concept is used to maintain Single roles and profiles for different end users. This is mainly used in the reports by using a customer exit variable which works based on the authorization details.

When the number of analysis authorization objects increases their manageability becomes a difficult task. In such cases we go for authorization using variables at runtime. These variables are made to read the authorized values from DSO, info objects, etc. as per the requirement.

Here I have briefly explained about the Dynamic analysis authorization concept using master data.

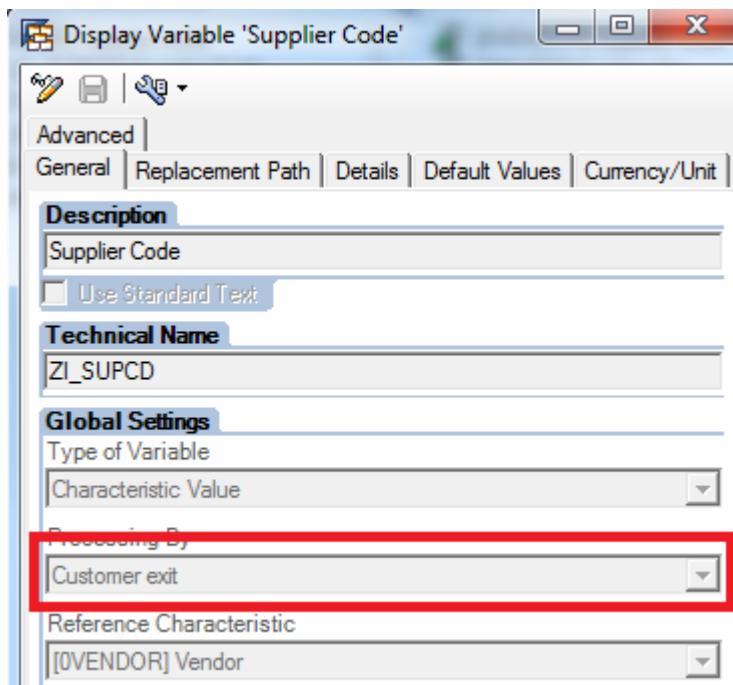
## Assumptions & Pre-requisite:

Here we are considering vendor authorization, where the vendor values which start with '7' are the vendors who has the restrictions for viewing the data and all the other vendors can view all the data (i.e. no restriction required)

For all activities in the management of analysis authorizations you need authorization for authorization object S\_RSEC, which covers all relevant objects with namespace authorizations for specific activities.

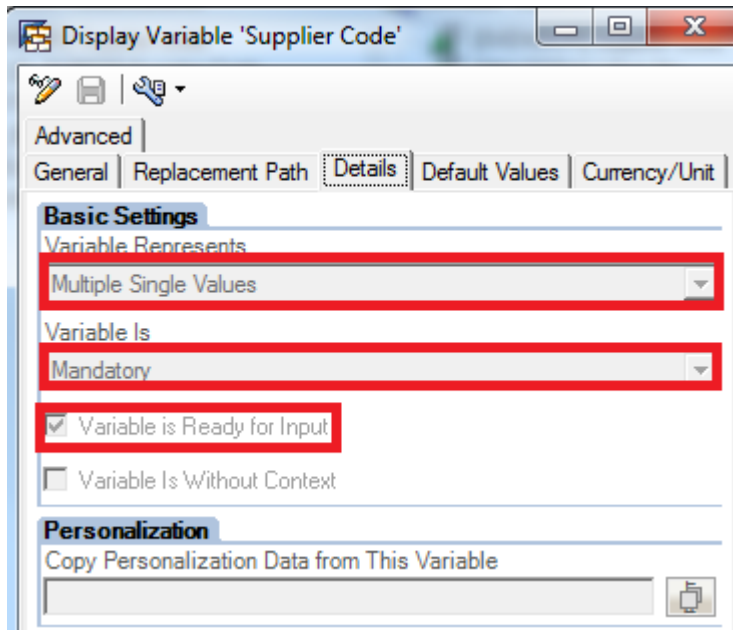
## Variable Creation:

Create a Variable 'ZI\_SUPCD' for the info object 0VENDOR of type 'Customer Exit'.

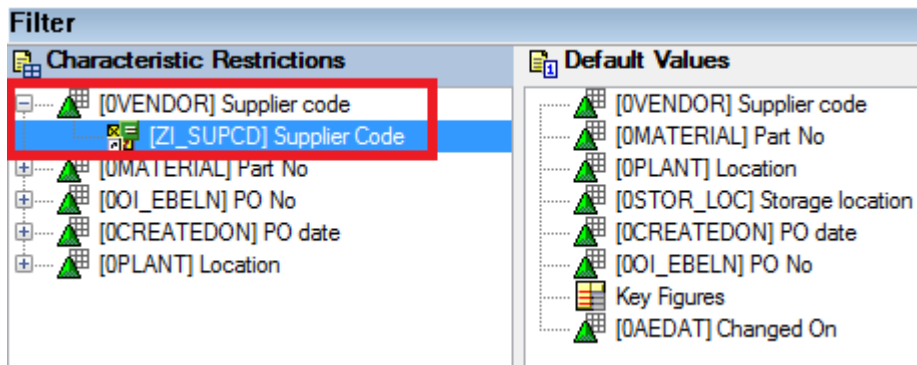


The screenshot shows the 'Display Variable' configuration window for 'Supplier Code'. The window has a title bar 'Display Variable 'Supplier Code'' and standard window controls. Below the title bar is a toolbar with icons for edit, save, and help. The main area is divided into tabs: 'Advanced' (selected), 'General', 'Replacement Path', 'Details', 'Default Values', and 'Currency/Unit'. Under the 'Advanced' tab, there are several sections: 'Description' with a text field containing 'Supplier Code' and a checkbox for 'Use Standard Text'; 'Technical Name' with a text field containing 'ZI\_SUPCD'; 'Global Settings' with a dropdown for 'Type of Variable' set to 'Characteristic Value'; 'Processing By' with a dropdown set to 'Customer exit' (highlighted with a red box); and 'Reference Characteristic' with a dropdown set to '[0VENDOR] Vendor'.

Make the variable as ready for input and a Mandatory one. In case if we are passing multiple values to the authorization variable, then use "Multiple Single Values".

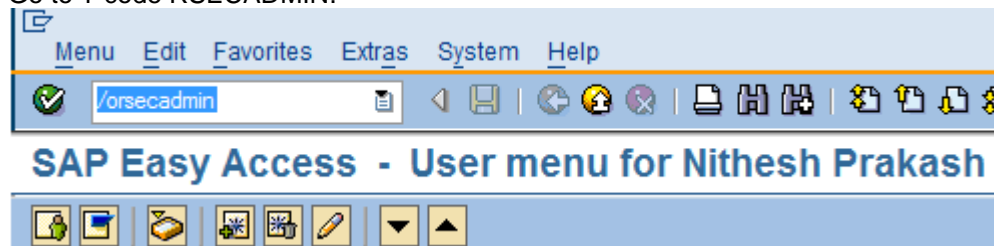


Add the created variable to the query which needs to display the restricted data set depending upon the authorizations for the particular user.

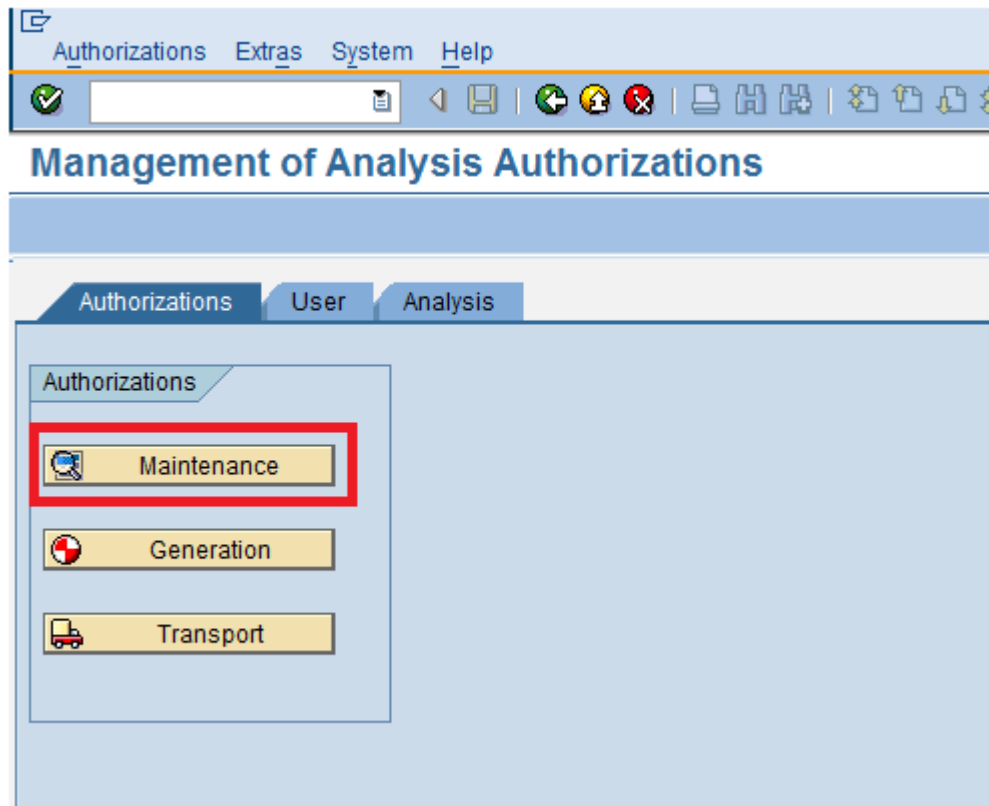


## Analysis Authorization Object Creation

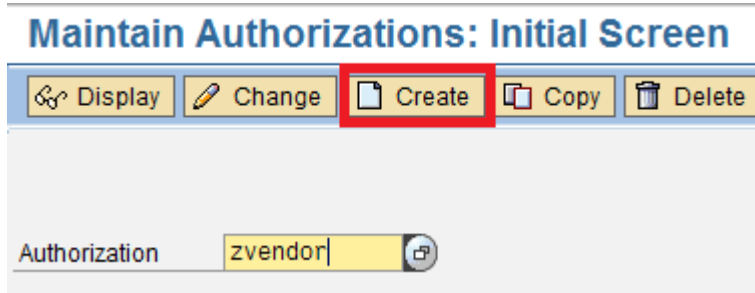
Go to T code RSECADMIN.



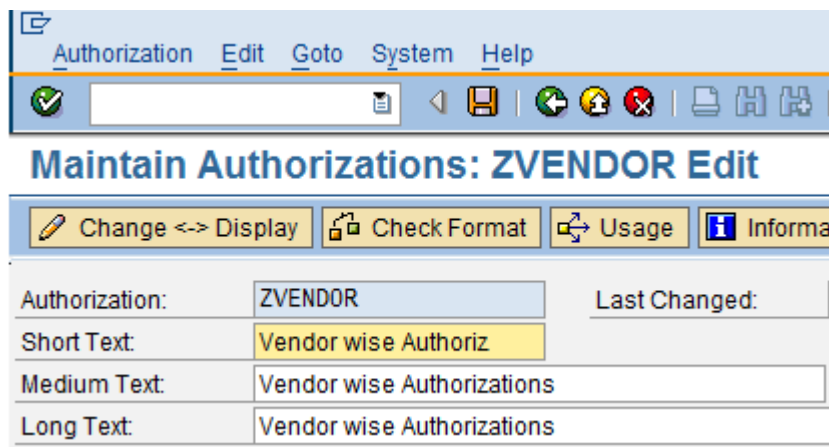
In the Authorization tab, click maintenance button



Give the name for the authorization object say "ZVENDOR" and click Create.



Give the short, medium and long text.



Click the "Insert Special Charact." Button

Authorization: ZVENDOR Last Changed: CBI\_NITHEHP 25.10.2010 1

Short Text: Vendor wise Authoriz

Medium Text: Vendor wise Authorizations

Long Text: Vendor wise Authorizations

Auth. Structure

Charact./Dimensions	Description	Intervals	Node

This will insert the mandatory authorizations such as Activity, Info provider authorization and Validity of the authorization.

Authorization: ZVENDOR Last Changed: CBI\_NITHEHP 25.10.2010 1

Short Text: Vendor wise Authoriz

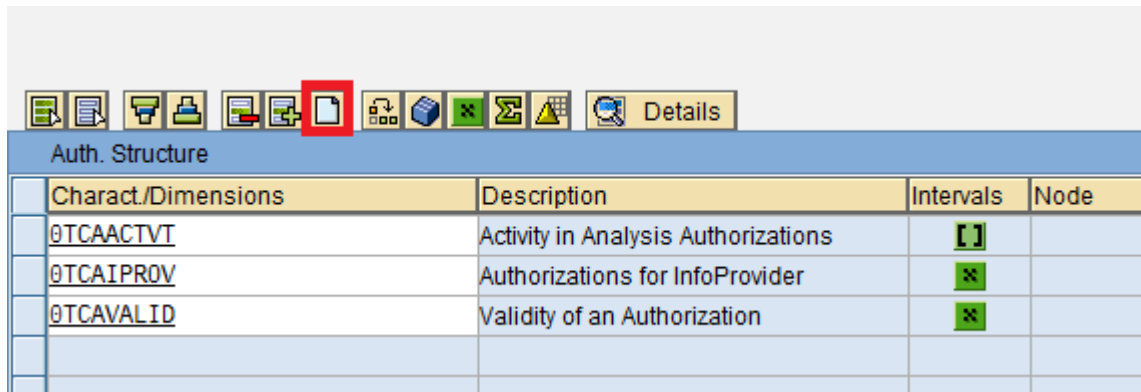
Medium Text: Vendor wise Authorizations

Long Text: Vendor wise Authorizations

Auth. Structure

Charact./Dimensions	Description	Intervals	Node
@TCAACTVT	Activity in Analysis Authorizations	[ ]	
@TCAIPROV	Authorizations for InfoProvider	x	
@TCAVALID	Validity of an Authorization	x	

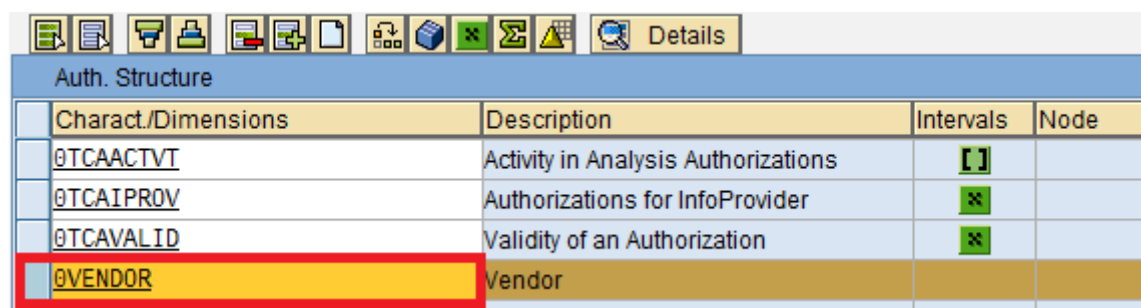
Click “Create Row” button to add the info object which needs authorization.



The screenshot shows the 'Auth. Structure' table with a toolbar at the top. The 'Create Row' button (represented by a document icon with a plus sign) is highlighted with a red box. The table contains the following data:

Charact./Dimensions	Description	Intervals	Node
@TCAACTVT	Activity in Analysis Authorizations	[ ]	
@TCAIPROV	Authorizations for InfoProvider	x	
@TCAVALID	Validity of an Authorization	x	

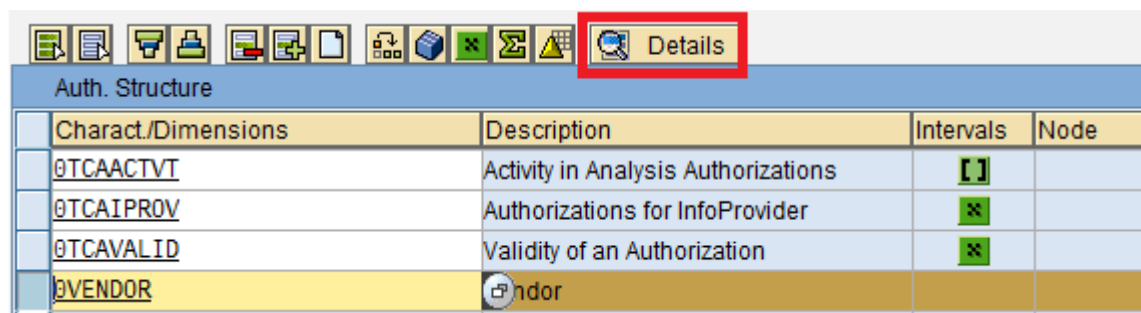
For our scenario we need authorization for 0VENDOR and hence we have to add the same in the rows.



The screenshot shows the 'Auth. Structure' table with a new row added. The '0VENDOR' row is highlighted with a red box. The table contains the following data:

Charact./Dimensions	Description	Intervals	Node
@TCAACTVT	Activity in Analysis Authorizations	[ ]	
@TCAIPROV	Authorizations for InfoProvider	x	
@TCAVALID	Validity of an Authorization	x	
0VENDOR	Vendor		

Now click the “Details” button to provide authorization.



The screenshot shows the 'Auth. Structure' table with the 'Details' button in the toolbar highlighted with a red box. The table contains the following data:

Charact./Dimensions	Description	Intervals	Node
@TCAACTVT	Activity in Analysis Authorizations	[ ]	
@TCAIPROV	Authorizations for InfoProvider	x	
@TCAVALID	Validity of an Authorization	x	
0VENDOR	Vendor		

Click the “Insert Exit Variable” button and add specify the variable “ZI\_SUPCD” which we created initially, in case of Dynamic authorization. For static authorization scenario we can specify the values directly by clicking “Create Row”.

## Maintain Authorizations: ZVENDOR Create

Authorization: ZVENDOR  
 Description: Vendor wise Authoriz  
 Charact. @VENDOR Vendor

Single Intervals

I	O	Technical Character. (from)	Technical Charact. Value (to)
I			

Single Intervals

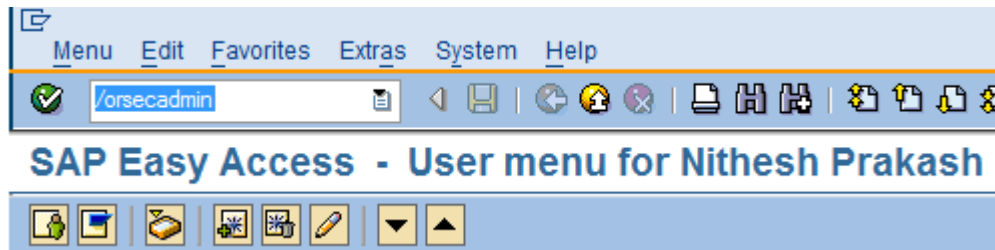
I	O	Technical Character. (from)	Technical Charact. Value (to)
I	EQ	\$ZI_SUPCD	

Save and activate the Object.

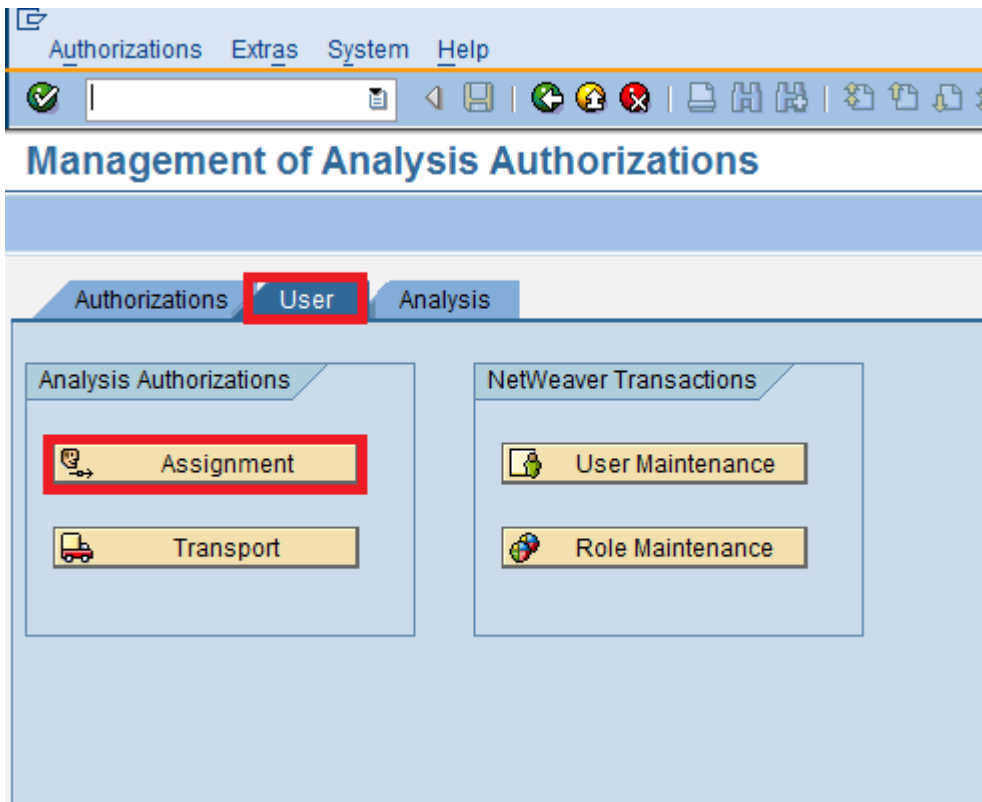


## User Assignment

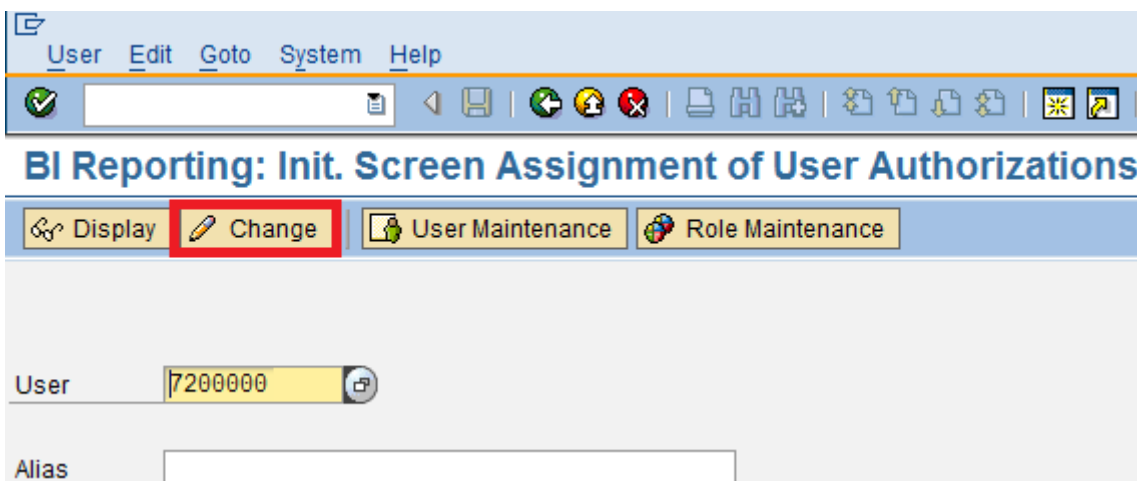
Go to T code RSECADMIN



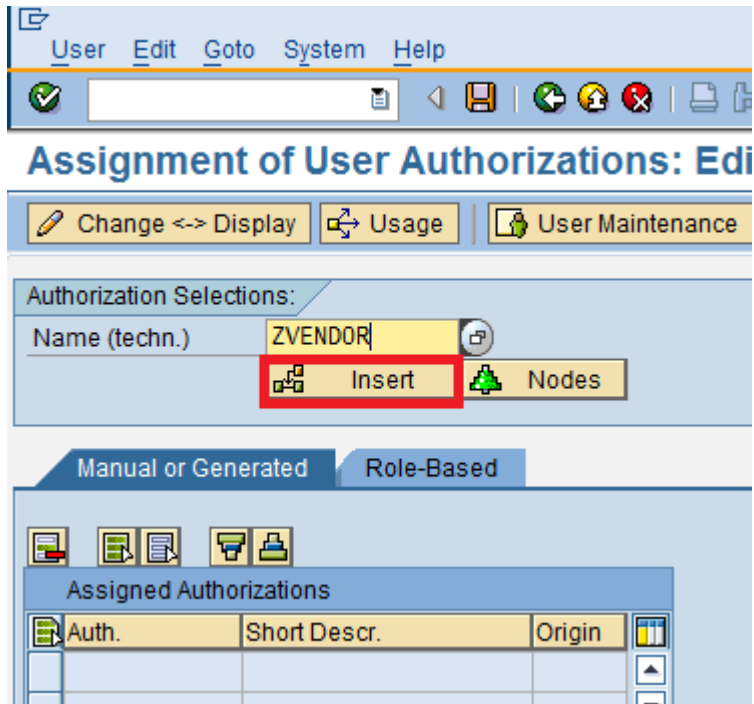
In the User tab, click Assignment button



Specify the user for whom the restriction needs to be applied and click "Change" button.



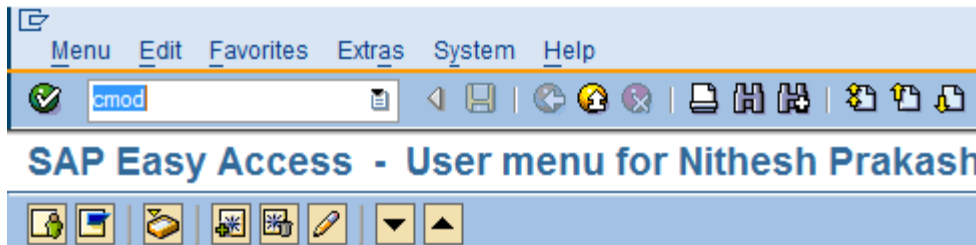
Specify the authorization object created for this purpose and click insert.



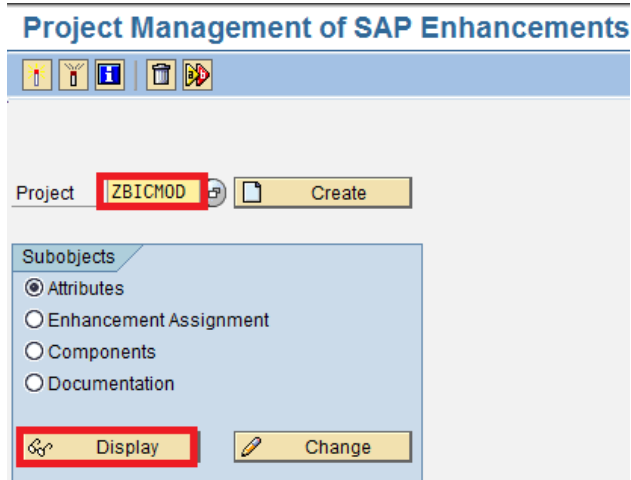
Note: This dynamic authorization concept will work even without the User assignment, since this is based on the variable exit.

## CMOD code logic

Go to transaction CMOD



Select the project created, else create one.



Click the components button.

## Attributes of Enhancement Project ZBICMOD

Enhancement assignments
Components

**Project** ZBICMOD

**Short text** Enhancement for Reporting Variable Exits and Virtual Exits

Select the Function module "EXIT\_SAPLRRS0\_001" for writing exit for the variable created.

## Display ZBICMOD

Enhancement assignments
Enhancement

Project		■		ZBICMOD Enhancement for Reporting Variable Exits and Virtual Exits
Enhancement	Impl	■	Exp	RSR00001 BI: Enhancements for Global Variables in Reporting
Function exit	✓	■		EXIT_SAPLRRS0_001
Enhancement	Impl	■	Exp	RSR00002 BI: Virtual Characteristics and Key Figures in Reporting
Function exit		■		EXIT_SAPMRSRU_001 EXIT_SAPMRSRU_999

Click the include program ZXRSRU01.

## Function Builder: Display EXIT\_SAPLRRS0\_001

EXIT\_SAPLRRS0\_001
Active

Attributes
Import
Export
Changing
Tables
Exceptions
Source code

```

1  FUNCTION EXIT_SAPLRRS0_001.
2  ""-----
3  ""*""Lokale Schnittstelle:
4  "" IMPORTING
5  ""   VALUE(I_VNAM) LIKE  RSZGLOBV-VNAM
6  ""   VALUE(I_VARTYP) LIKE RSZGLOBV-VARTYP
7  ""   VALUE(I_IOBJNM) LIKE RSZGLOBV-IOBJNM
8  ""   VALUE(I_S_COB_PRO) TYPE  RSD_S_COB_PRO
9  ""   VALUE(I_S_RKB1D) TYPE  RSR_S_RKB1D
10 ""   VALUE(I_PERIV) TYPE  RRO01_S_RKB1F-PERIV
11 ""   VALUE(I_T_VAR_RANGE) TYPE  RRS0_T_VAR_RANGE
12 ""   VALUE(I_STEP) TYPE  I DEFAULT 0
13 "" EXPORTING
14 ""   VALUE(E_T_RANGE) TYPE  RSR_T_RANGESID
15 ""   VALUE(E_MEEHT) LIKE  RSZGLOBV-MEEHT
16 ""   VALUE(E_MEFAC) LIKE  RSZGLOBV-MEFAC
17 ""   VALUE(E_WAERS) LIKE  RSZGLOBV-WAERS
18 ""   VALUE(E_WHFAC) LIKE  RSZGLOBV-WHFAC
19 "" CHANGING
20 ""   VALUE(C_S_CUSTOMER) TYPE  RRO04_S_CUSTOMER OPTIONAL
21 ""-----
22
23
24  INCLUDE ZXRSRU01 .
25

```

Declaration part for the Variable exit.

```

▶ *****Start of Declaration for ZI_SUPCD*****

+ **** Declaration for ODS Scenario****

**** Declaration for Master Data Scenario****
  DATA: it_vendor TYPE STANDARD TABLE OF /bi0/pvendor,
         wa_vendor LIKE LINE OF it_vendor.
  DATA: lv_user LIKE sy-uname,
         lv_user1 LIKE /bi0/pvendor-vendor.
▶ *****End of Declaration for ZI_SUPCD*****

```

Default value population should be written within the CASE and ENDCASE statement.

```

CASE i_vnam.
  *****Start of Code for ZI_SUPCD*****
  WHEN 'ZI_SUPCD'.

    lv_user = sy-uname.

    IF lv_user CP '7*'.

      CALL FUNCTION 'CONVERSION_EXIT_ALPHA_INPUT'
        EXPORTING
          input = lv_user
        IMPORTING
          output = lv_user1.

      CLEAR wa_vendor.

      SELECT * FROM /bi0/pvendor INTO TABLE it_vendor WHERE vendor = lv_user1.

      READ TABLE it_vendor INTO wa_vendor WITH KEY vendor = lv_user1.

      IF sy-subrc = 0.

        l_s_range-low = wa_vendor-vendor.
        l_s_range-sign = 'I'.
        l_s_range-opt = 'EQ'.

        APPEND l_s_range TO e_t_range.

      ENDIF.

    ENDIF.

  ENDIF.
  *****End of Code for ZSUPPVAR*****

```

User input value has to be validated after the ENDCASE statement with I\_STEP value 3.

```

- ENDCASE.

] IF I_STEP = 3.
] LOOP AT i_t_var_range INTO loc_var_range WHERE vnam = 'ZI_SUPCD'.

    CLEAR: l_s_range.
    zlow = loc_var_range-low.
    lv_user = sy-uname.

    CALL FUNCTION 'CONVERSION_EXIT_ALPHA_OUTPUT'
      EXPORTING
        input          = loc_var_range-low
      IMPORTING
        OUTPUT        = loc_var_range-low.

] IF lv_user NE loc_var_range-low.
] IF lv_user CP '7*'.
    CALL FUNCTION 'RRMS_MESSAGE_HANDLING'
      EXPORTING
        I_CLASS        = 'RSBBS'
        I_TYPE         = 'E'
        I_NUMBER       = '000'
        I_MSGV1        = 'You are not authorized for the Supplier code'
        I_MSGV2        = loc_var_range-low
        I_MSGV3        = 'Enter your valid supplier code'
        I_MSGV4        = lv_user
      EXCEPTIONS
        OTHERS         = 2.
    RAISE Again.
] ELSE.
    l_s_range-low = loc_var_range-low.
    l_s_range-sign = loc_var_range-sign.
    l_s_range-opt = loc_var_range-opt.
    APPEND l_s_range TO e_t_range.
- ENDIF.
- ENDIF.
- ENDLOOP.
- ENDIF.

```

Now the entire development is done.

## Query Execution (to Test the Authorization)

While Executing with Vendor “7200000”

The variable screen will be populated as below

The screenshot shows a dialog box titled "Select Values for Variables". It contains several input fields for variables. The "Supplier Code(\*)" field is populated with the value "7200000". Other fields like "Material", "PO No", "Key Date Interval", and "Plant" are empty. The dialog has "OK", "Cancel", and "Check" buttons at the bottom.

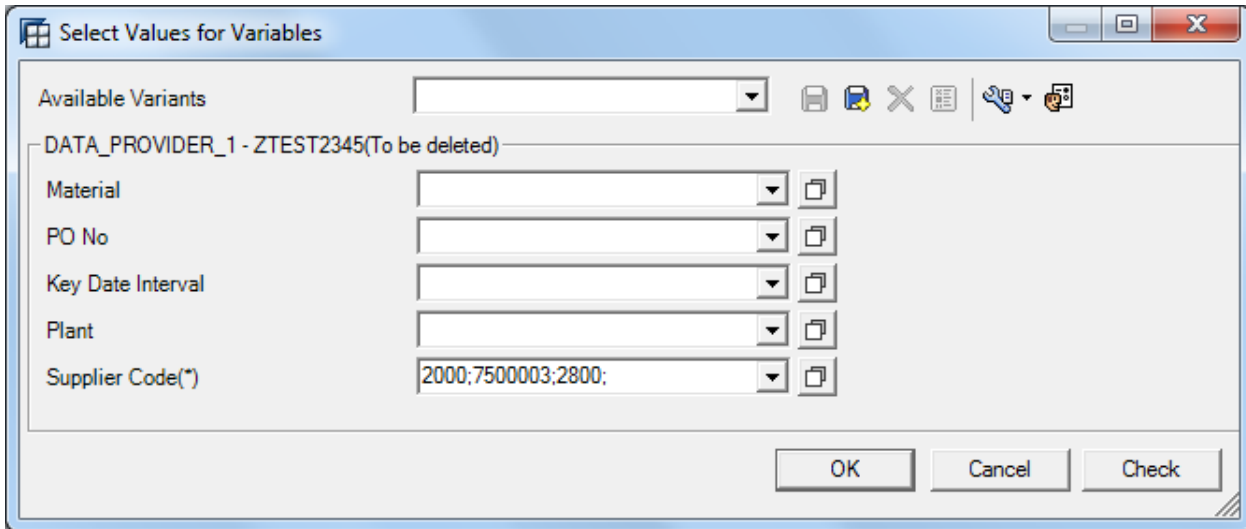
Query Output:

Supplier code	Part No	Location	Storage location	PO No	PO date	Changed On	Order quantity
7200000	7200000				09/29/2010	09/29/2010	0 EA
<b>Overall Result</b>							<b>0 EA</b>

The vendor “7200000” is authorized to view only his data. When he tries to check value for other vendor he will get an authorization error.

The screenshot shows the same "Select Values for Variables" dialog box, but the "Supplier Code(\*)" field is now set to "7800". Overlaid on top of this dialog is a "BEx Analyzer Message Window" with a red warning icon. The message text reads: "You are not authorized for the Supplier code 7800 Enter your valid supplier code 7200000". The message window has an "OK" button and a checkbox for "Display Messages Automatically" which is checked.

While Executing with other than 7\* series vendors, there won't be any restriction as he is authorized to see the value for all the vendors



The user has selected the vendor codes "2000", "7500003", "2800", he will be able to see all the specified vendor values.

Supplier code	Part No	Location	Storage location	PO No
2000			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			PRODUCTION STORE	5500000000
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
			CONSUMABLES	10003
7500003			2002/Not assigned	5500000192
2800			7800/Not assigned	5500000137
			7800/Not assigned	5500000123
			7800/Not assigned	5500000121
				5500000122
				5500000123
			7800/Not assigned	5500000123
				5500000138
Overall Result				

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[Customer Exits](#)

[Analysis Authorizations](#)

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