Configuration of HR Triggers in CUP

Applicable Releases:
SAP GRC Access Control 5.3

Version 2.0

Topic Area:
HR Triggers in CUP

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Capability:
The Compliant User Provisioning capability of GRC Access Control tool allows users to create rules in SAP HR system and associate Compliant User Provisioning actions to those rules.

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1. Business Scenario

In a typical business scenario where SAP HR system is being used to maintain the master data for all employees, whenever any change occurs in the SAP HR system then it needs to be manually maintained in all the other systems. The HR Triggers functionality of CUP will allow creation of automatic requests in CUP corresponding to changes in the master data in SAP HR system. User does not need to fill the CUP request form. When an event is triggered in the SAP HR system, such as hiring a new employee, rules are applied and a corresponding action to create a workflow request is initiated in CUP. The request can be processed through Compliant User Provisioning workflow and can be provisioned to backend system directly or indirectly through CUP.

2. Background Information

This document outlines the steps involved in the configuration of HR Triggers for an SAP HR system. HR Triggers will allow automatic creation of workflow requests in CUP when some actions like hiring of a new employee, position change or change in personal data of an employee are held in SAP HR system. Here is some explanation on the four options that we have for configuring HR Triggers:

- **Actions**
  - What to do when a rule is encountered

- **Rules**
  - When will the action be performed
  - Automatic SAP HR triggers

- **Field Mapping**
  - Map SAP HR fields to CUP fields

- **Process Log**
  - Record of CUP updates through HR Triggers

3. Prerequisites

- GRC Access Control 5.3 should be installed and configured.
- Background daemon should be configured.
- Set HR TRIGGERS LOAD DATA JOB to 60 sec and HR TRIGGERS job to 80 seconds.
4. PROCEDURE

The configuration of HR Triggers in CUP includes configuration of actions, rules and field mapping in CUP.

- Log in to CUP as an administrator. Click on the Configuration tab.
- Click the HR Triggers link in the left side Navigation pane and the four options that you will see are:
  - Actions
  - Rules
  - Field Mapping
  - Process Log

4.1 Create SAP HR Connector

1) Create connector in CUP using the Create connector option in the configuration tab.
2) Make sure that the option of whether this system is SAP HR is set to YES.

4.2 HR Triggers Field Mapping:

1) Go to the Field Mapping option of HR Triggers in CUP.
2) Select the desired SAP HR system from the dropdown. All the SAP HR connectors will appear in the dropdown of this Select SAP HR system option.
3) Click the Load Standard Field Mapping option on this page. This will load the standard CUP and SAP HR mapping.
4) It is recommended to use the standard field mapping provided out of the box with CUP.
5) Here is the screenshot showing mapping of CUP fields with SAP HR fields:
6) Users may choose not to utilize the standard SAP HR mapping delivered with CUP and maintain his own mapping by changing the field names within the pre delivered mapping or adding new fields.

Please ensure that if additional fields are made mandatory in the end user personalization option, then those fields are mapped to the corresponding SAP HR fields.

4.3 Configure Workflow

1) Configure the desired workflow that is to be followed for the request submitted through HR Triggers.

2) For example, if we want a change request to be submitted whenever the employee’s personal data (say employee’s First name) is altered in the backend then configure the workflow as follows:

a) Create Initiator:

b) Create Customer approver determinator:
4.4 Configure Actions

1) Actions determine what to do when a rule is encountered. It basically specifies what type of request should be triggered when some event has happened in backend SAP HR system and also corresponds to the nature of that event.

2) To create an Action:
   a) On the Configuration tab of CUP, go to the Actions option of the HR Triggers configuration.
   b) Enter the Action ID, Short Description and Description of the Action. For example in the screenshots below, the Action for Change of First Name in SAP HR system is described.
   c) These actions can be maintained for various changes that happen in SAP HR system like New Hire, transfer etc.
   d) The next field is to select the request type and priority which will determine the initiator for submitting the request for this Action.
   e) The dropdown for Type has all the Request Types in CUP and priority has all the priorities of CUP.
   f) In the System tab, add the system which you want to update with the change at the end of this request workflow.
   g) Maintain the Valid From and Valid To fields.

h) Click the Address tab, then click the drop-down menu to select Yes or No for each of the fields that you want to update with the changed data. The fields in the address tab are:
   a. Name
   b. Email
   c. Telephone
   The data is fetched from the HR Trigger field mapping configuration.

Please note that the Address configuration does not work currently (known issue) but will be fixed soon.

i) Click the Parameter ID tab.
   On the drop-down menu select Yes or No to update this field with the changed data when the user is provisioned. These Parameter Ids are fetched from CUP User Defaults.
j) Click the Default tab. Select Yes/No for the SU01 User Defaults to be considered or not while provisioning. Values are fetched from the User default option of CUP.

k) Click the User Group tab. Select ‘Yes/No’ if you want to update User Group field [User Group, User Group Name]. This updates the user Group tab in SU01.
Please note that the User Group configured in this tab doesn’t get provisioned as of now (known Issue) and this issue will be fixed soon.

4.5 Configure rules

1) Click Rules > Create. The Rules page appears.
2) In the HR Systems field, click the drop down menu to select the appropriate HR system where you want to define a rule. You need to define rules for all HR Systems individually.
3) Enter values in the Rule Id, Effective from, Rule Short Description and Rule Description fields.
4) In the Actions field, select the appropriate action that you want to associate with this rule.
5) In the Attribute tab, define the rule for which you want to trigger the request.
6) The Info Type and Sub Type point to a specific field in the SAP HR system.
7) For example in the screenshot below, rule has been defined for change of first name in the personal data for any employee
8) $ represents the old value of the field.

4.6 HR Trigger Provisioning Configuration

The HR Trigger requests may result in direct or indirect provisioning via CUP. This can be configured at the Auto Provisioning option in the left side navigation pane of CUP.
Direct Provisioning for HR Triggers:
- Position does not have roles associated.
- HR Event triggers a CUP request.
- During the workflow approval process, the approver manually adds/remove roles.
- Roles are provisioned to SU01.

Indirect Provisioning for HR Triggers:
- CUP fetches roles from Position for the request.
- During the workflow approval process, approver can remove roles or add additional roles.*
- Roles will be provisioned to Position, therefore roles are provisioned to user indirectly.

Old Roles Delimit Duration: This is the duration for which old roles will be assigned to a user in case of a position change scenario.

For Old Roles Delimit Duration:
- If you pick 0 years, 0 months, 0 days as the delimit duration, then the role is only assigned for today’s date.
- If you enter 3 in day’s, then the role’s is delimited 3 days from the day the request was created.

For HR trigger indirect provisioning, only Position type is supported
Position and Personnel (User) has a one to one relationship (Provisioning to Position has impact only on one Personnel)

4.7 Schedule Background jobs
The following background jobs need to be scheduled for the HR system to sync data from HR system to CUP and trigger the requests:
HR Triggers Load data: Retrieves the data updated in SAP HR system. Set it to 60 sec.
HR Triggers: Triggers requests based on the updates from SAP HR system. Set it to 80 sec.

### 4.8 Process Log

The Process Log enables to view all the processes that are performed within CUP that are associated with HR Triggers.

It shows all the requests that are related to HR Triggers.

Here is the screenshot showing the request number 41 as a line item for approval which was submitted through HR Triggers.
The screenshot below shows the audit information for the provisioning of change request and that data has been altered in the system.
Now, we can go to the specific backend system and check for the changed credentials. The first name should now be changed to Tom from Brian.
5. Use Case for HR Triggers with Indirect Provisioning

1) New Hire
2) Position Change
3) Lock User

5.1 New Hire

When a new personnel is hired into a position in HR, a provisioning request with roles from the assigned position will be automatically generated in CUP for approval.

Please follow the steps and screenshots given below to configure HR Triggers for New Hire event in SAP HR.

Prerequisites:
1) Employee is created in HR with position assigned
2) Roles are assigned to this Position in HR
3) The following user data must be created for Infotype 105 to make sure the request has required user data:
   - Subtype 0001 – User ID
   - Subtype 0010 – User Email
   - Subtype 0020 – User Telephone.

Use Case:
1) New Hire event triggers the CUP request
2) Request fetches roles from position (role 1, role 2,) to default on the CUP request
3) Approver runs risk analysis – if the approver “Rejects” role 1 and approves role 2 then,
   The user will be assigned to the new position which will still have both the roles: role 1 and role 2.

OR

Approver runs Risk Analysis – if approver “Remove” role 1 and approve role 2 then,
The user will be assigned to the new position which will have only role 2 in it.
So, rejecting a role will not remove it from the request but removing will remove it from request.

Steps:
1) Create field mapping for the selected SAP HR System
2) Associate the New Hire action to the NEW_HIRE request type

Please ensure to use only the standard pre defined NEW_HIRE request type delivered with CUP.

3) Define a rule for NEW HIRE
MASSN means the hiring code 01 = New Hire
USRID ensures there is SU01 User ID created and associated to the Personnel before the request is created

4) Go to the backend system to trigger the rule:
   1. Create a user in SAP HR

   ![Image of SAP HR interface]

   As you are creating SAP HR record, have Action Type as Hiring

   2. Add the user id after creating the SAP HR record via 0105 → 0001

   3. User data must be created for Infotype 105:
      - Subtype 0001 – User ID,
      - Subtype 0010 – User Email
      - Subtype 0020 – User Telephone.
4. HR Event is triggered. You may go to “/VIRSA/INT_TRIG” table via se16 to check if the event has been triggered.

5. To check the data within a trigger, go to “/VIRSA/DATA” table and enter the trigger id.
6. Run the HR Triggers Load Data background job. New Hire event triggers a request.

7. Check the process log and observe that a new entry is made for New Hire request type.

8. Run the HR Triggers background job: Observe the new request is created for trigger 97.
9. Provision the request
10. User is provisioned in the backend
5.2 Position change

When a personnel is transferred from an existing position to a new position, a provisioning request, with roles from new position populated, will be automatically generated in CUP for approval. Roles from old position can be delimited based upon configuration criteria.

Please follow the steps and screenshots given below to configure HR Triggers for Position Change event in SAP HR.

Use Case
1) Position is changed from P1 (Role 1, Role 2) to P2 (Role 3, Role 4)
2) User inherits new position from P2 (Role 3, Role 4)
3) Position change event triggers a CUP request.
   Once the Position is changed in HR, the user obtains the new roles indirectly.
   To ensure that user is not able to perform access before the approval, the recommended scenarios are below:
   For Position Changes with roles indirectly assigned from Position, the event triggers a request with following actions:
   1. Lock User (before approval process occurs)
   2. Workflow approval process for roles assigned from Position
   3. Unlock User after request is approved

   Lock user and unlock user can be configured as stage-less workflow to streamline the process
4) In the position change scenario, HR trigger event can also include roles from the old position with delimit time if roles are still needed for certain time
   Request fetches roles from new position P2 (Role3, Role4) and also maintain roles from P1 (Role1, Role2)
   Role1 valid from 2/3/09 2/13/09 (with delimited date 10 days)
   Role2 valid from 2/3/09 2/13/09 (with delimited date 10 days)
   Role3 valid from 2/3/09 12/31/09
   Role4 valid from 2/3/09 12/31/09
5) If approver Removes new role Role3 or Role4, it will be removed from the new position P2, and user will not get Role3 or Role4 roles
   If approver Removes old delimited role Role1 or Role2, it does not have impact on user, as these 2 roles do not belong to new position P2
   If approver Rejects new role Role3 or Role4, the user will have all the roles assigned to him. Role1, Role 2 with delimited dates, and R3 and R4 as well.
   If approver Rejects old role Rol1 or Role2, it will not be provisioned to user and the user will have only Role3 and Role4 assigned to him.

Steps:
1) Create field mapping for the selected SAP HR System
2) Configure Lock, Change and Unlock actions in CUP
3) Create a rule and tie these three actions of Lock, Change and Unlock to that rule.

‘PLANS’ is the variable where position number is stored in SAP HR. If it is an organizational reassignment (MASSN = 02), and the position changes (PLANS <> $PLANS) then trigger this rule"
4) Execute the HR Triggers Load Data background job and observe a request is created for lock

5) Provision the request in CUP
6) Check in SAP R/3 backend and observe that the user is locked
7) Run the HR Triggers background job again and observe the update in process log

8) Provision the request 764 and the additional role is assigned
9) Run the HR Triggers background job, and observe a request is created for the third action (unlock)
10) Observe the user is locked in the backend prior to provisioning

11) Provision the unlock request: 765
12) Observe that the user is now unlocked in SAP R/3
5.3 **Lock**

**Configurations:**

1) Create field mapping for the selected SAP HR system

2) Define an action for termination associated with a request with delete action
   
   1. Define a rule for termination:
   
   2. PERNR is the personnel number. In object oriented terms, this is the parent object.
      This rule translates as: “if the personnel number changes through termination (Info Type:0000 \(\rightarrow\) Sub type:20), then trigger this rule”.
3) Go to the backend to trigger the rule: Termination event triggers the rule
4) Run the HR Triggers Load Data background job
5) Check in the process log and observe a new entry is made

6) Run the HR Triggers background job and a new request is triggered
7) Provision the request generated
6. Troubleshooting

6.1 Request not getting triggered

1) If after configuring the HR Triggers, request does not get initiated in CUP then check if the rules maintained in CUP are being mapped to backend or not.

1. Go to SE16 and enter the table name "/virsa/ruleattr":

2. This gives the list of all the rules that will be checked in backend while running HR Triggers Load data job.

2) To check which triggers have been processed, check table "/virsa/int_trig"
3) Field mapping can be verified from the following:

4) "/virsa/data": gives the old and new value for the updated HR data.
6.2 Error in process log

If there are some new entries in the Process Logs which are not processed to create a request then there might be some actions that are incomplete due to insufficient data, resulting in subsequent entries not being processed.

- Check the System Log for additional information
- Run the “HR Triggers” job to create the request for all the triggers in “Not Processed” status
- After completion of job please check the process log again, it will show you the request no. created and the status will be “In Process” now.
- If the workflow or the approvers are not configured properly then you will see a message in the process logs and requests will not be created.
- If data is not getting captured for all the mandatory fields, specified in “End User Personalization” screens.
7. Comments and Feedback

Please send your comments and feedback on: grc_rig@sap.com