Integration Guide

CUSTOMER

SAP SuccessFactors Employee Central
Version: Aug 2026

SAP SuccessFactors Employee Central to SAP Access Control Integration

Using SAP Cloud Integration

successfactors™
An SAP Company

Contents

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Contents

1 Introduction 6

1.1 Target Group 6

1.2 Prerequisites 6

1.3 Related Guides 7

2 Integration Overview 9

2.1 Overview Illustration 9

2.2 SuccessFactors Integration Scenarios 10

2.2.1 Add New Employee 10

2.1.2 Change Employee Job Data 11

2.1.4 Terminate Employee 12

3 Configuring SAP SuccessFactors Employee Central 14

3.1 Web Service Setup 14

3.2.1 Set Permissions for API User 17

4 Configuring SAP Access Control 18

4.1 Prerequisites 18

4.2 Activating the Web Services 20

4.3 Create Binding for WS 23

4.4 Creating Request Types 25

4.5 Creating Request Priorities 28

4.6 Maintaining Settings for HR Trigger 29

4.7 Configuring the BRF+ Application SFEC_HR_TRIGGER_APP 31

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4.8 Mapping the BRF+ Function ID to SAP Access Control 37

4.9 Maintaining Rule-to-Role Mapping 39

4.10 Generating the BRF+ Function for Access Rule-to-Role Mapping 43

4.11 Configuring the BRF+ Decision Table 46

4.12 Mapping BRF+ to SAP Access Control Application IDs 65

4.13 Locating URLs for SAP Cloud Integration 67

5 Configuring SAP Cloud Integration Process 69

5.1 Configure SAP Cloud Connector Settings 69

5.2 Configure User Credentials for SFEC and GRC System 70

5.2.1 Configure GRC User Credentials 70

5.2.2 Configure SFEC User Credentials 71

5.3 Configure and Deploy iFlows 72

Step 1: Creating a Key Pair in SAP Cloud Integration 83

Step 2: Registering an OAuth2 client in SAP SuccessFactors System 84

Configuring the certificates on the SAP Cloud Connector 101

UI Certificate 102

System certificate 102

CA certificate 102

Configuring the backend for Principal Propagation 110

5.4 How to get the SAP Cloud Integration Client Certificate 112

5.5 View and Extend the Deployed iFlows using SAP Eclipse (Optional) 112

5.5.1 Download the iFlow Projects on Your Desktop 112

5.5.2 View the configured certificates and externalized parameters 113

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.5.3 Extend the project in Eclipse and Deploy 113

6 Monitor Phase: Monitor Messages Across Systems 114

6.1 Initial Load 114

6.2 Delta Load 114

6.3 Field Mapping in SAP Cloud Integration 115

7. Data Integration Concepts 120

7.1 Transferring Employee Change Data 121

7.2 Staging Tables 122

7.3 OData Services and SOAP Messages 123

7.4 Extending the Data Transfer Process 124

8 Monitoring the Integration Process 125

8.1 SAP Web Service Utilities 126

8.1.1 SAP Message Monitor 127

8.2 SAP Application Log 128

8.3 Employee Central SFAPI Audit Log 130

8.4 Process Reporting in SAP Cloud Integration 132

8.4.3 Messages in SAP Web Service Utilities 133

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

1 Introduction

The purpose of this guide is to document the integration of SAP SuccessFactors Employee Central with SAP Access Control using SAP Cloud Integration.

After executing the steps described in this document you will be able to transfer SAP SuccessFactors Employee Central data to SAP Access Control to perform user provisioning.

> ⚠ Caution
>
> Usage of any integration software and content provided with the SAP Business Suite or SAP Access Control and applicable to integration between the SAP Business Suite or SAP Access Control and SAP SuccessFactors Employee Central is permitted only with SAP Access Control and a valid, current contract for SAP SuccessFactors Employee Central.

1.1 Target Group

The intended audience for this guide is:

- SAP Access Control professional services and consultants
- SAP SuccessFactors consultants
- SAP Cloud Integration consultants
- System/cloud administrators

1.2 Prerequisites

We assume that readers of this guide have basic knowledge in the following areas:

- SAP Access Control configuration and operation
- BRF+
- SAP SuccessFactors Employee Central configuration and operation
- SAP SuccessFactors provisioning
- SAP HANA Cloud Integration

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

1.3 Related Guides

The table below shows other guides that might be relevant in the integration of SAP SuccessFactors Employee Central with SAP Access Control.

Related guide	Type of the related guide	Content of the related guide	How is the guide related to the current guide?
Employee Central Master For the most current version of the guide see the SAP Help Portal at: *http://help.sap.com/cloud4hr under Employee Central ➔Implementation Guides.*	Implementation Guide	How to set up Employee Central	Before transferring employee change data to SAP Access Control, you need to set up Employee Central itself.
SF API Programmer's Guide For the most current version of the guide see the SAP Help Portal at: *http://help.sap.com/hr_api*	General programming guidelines		Contains a list of URLs Compound Employee API endpoints for SAP SuccessFactors Employee Central

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Related guide	Type of the related guide	Content of the related guide	How is the guide related to the current guide?
Implementing the Compound Employee API For the most current version of the guide see the SAP Help Portal at http://help.sap.com/hr_api/ under *SuccessFactors HCM Suite* ➔ *Employee Central*	User Guide	Explains the Compound Employee application programming interface (API) for SAP SuccessFactors Employee Central	Describes how to enable the *Compound Employee API* in provisioning and role-based permissions Implementation is required to run the integration and read data from Employee Central.
SAP Access Control Documentation http://help.sap.com/grc-ac : • Application Help • Configuration Settings Guide	Application Help Configuration Settings Guide		Provides information about SAP Access Control functionality.
SAP Access Control IMG In the SAP Access Control system, choose transaction *SPRO* ➔ *SAP Reference IMG* ➔ *Governance, Risk, and Compliance* ➔ *Access Control* ➔ *User Provisioning*	Configuration for user provisioning	Steps to set up user provisioning in SAP Access Control	Provides detailed instructions for configuring SAP Access Control.
Business Rule Framework Cookbook SAP Community Network – http:// scn.sap.com	Tutorial	Basics of using BRF+	Provides information on how BRF+ works.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

HANA - Secure Connections For the most current version of the guide see: https://cloudintegration.hana.ondemand.com/PI/help Scroll down to the section *Designing and Operating Cloud Integration Content – PDF Documentation.* Open the document *Connecting a Customer System to SAP Cloud Integration.* Go to ➔ *Concepts of Secure Communication* ➔ *Basics* ➔*HTTPS-Based Communication* ➔*Load Balancer Root Certificates Supported by SAP.*	Integration	List of all the supported certification authorities.	How to establish secure HANA connections

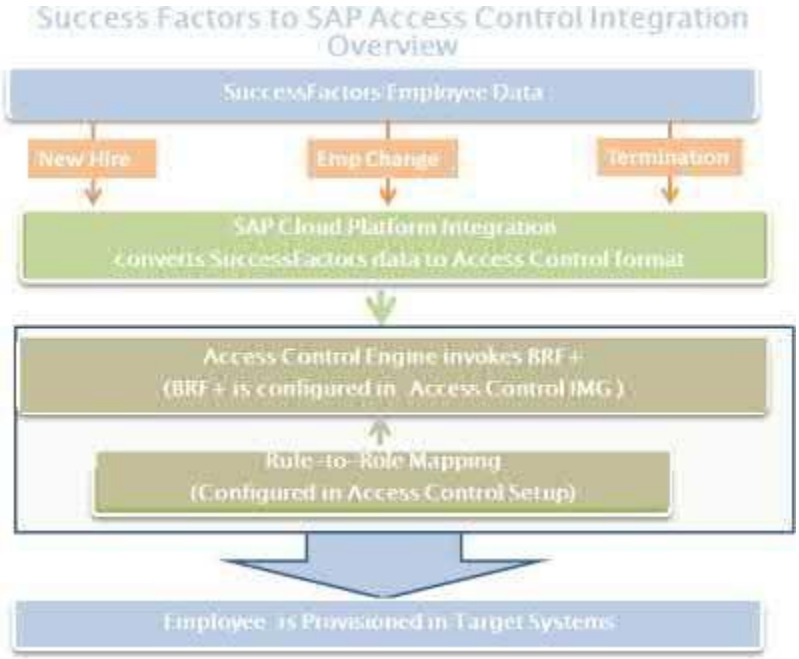
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2 Integration Overview

2.1 Overview Illustration

Figure 1 shows an overview of the SAP SuccessFactors to SAP Access Control integration process.

Figure 1: Integration Overview



1) Employee data resides in SAP SuccessFactors Employee Central.
2) The integration scenario covers three events in the SuccessFactors HR system:
    1. Add new employee
    2. Change employee job data (update employee records such as business unit or position)
    3. Terminate employee
3) SAP Cloud Integration retrieves changed employee data from Employee Central and converts it to a format that can be used by SAP Access Control.
4) SAP Access Control imports the data from SAP Cloud Integration. Using decision tables that are configured in the Business Rule Framework (BRF+) and in Rule-to-Role mapping, SAP Access Control creates access requests that contain the appropriate roles and actions for the employee.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5) SAP Access Control provisions the employee in the correct target systems with the appropriate role assignments (role assignments are removed in the case of employee termination).

2.2 SuccessFactors Integration Scenarios

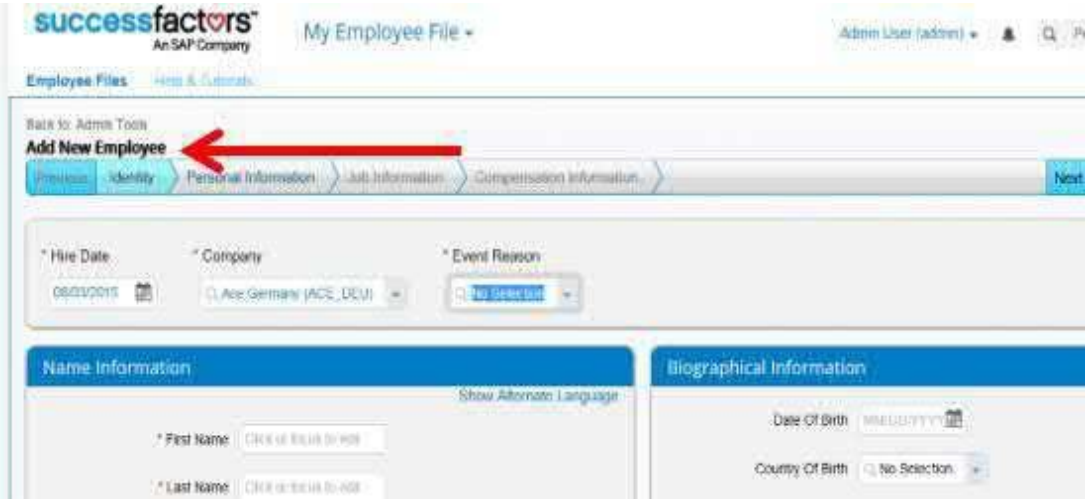
The SuccessFactors to SAP Access Control integration supports three scenarios:

1. Add New Employee
2. Change Employee Job Data
3. Terminate Employee

2.2.1 Add New Employee

Figure 2 shows the SuccessFactors screen that you use to add a new employee. The data that you enter here is transferred to SAP Cloud Integration.

Figure 2: Add New Employee in SuccessFactors

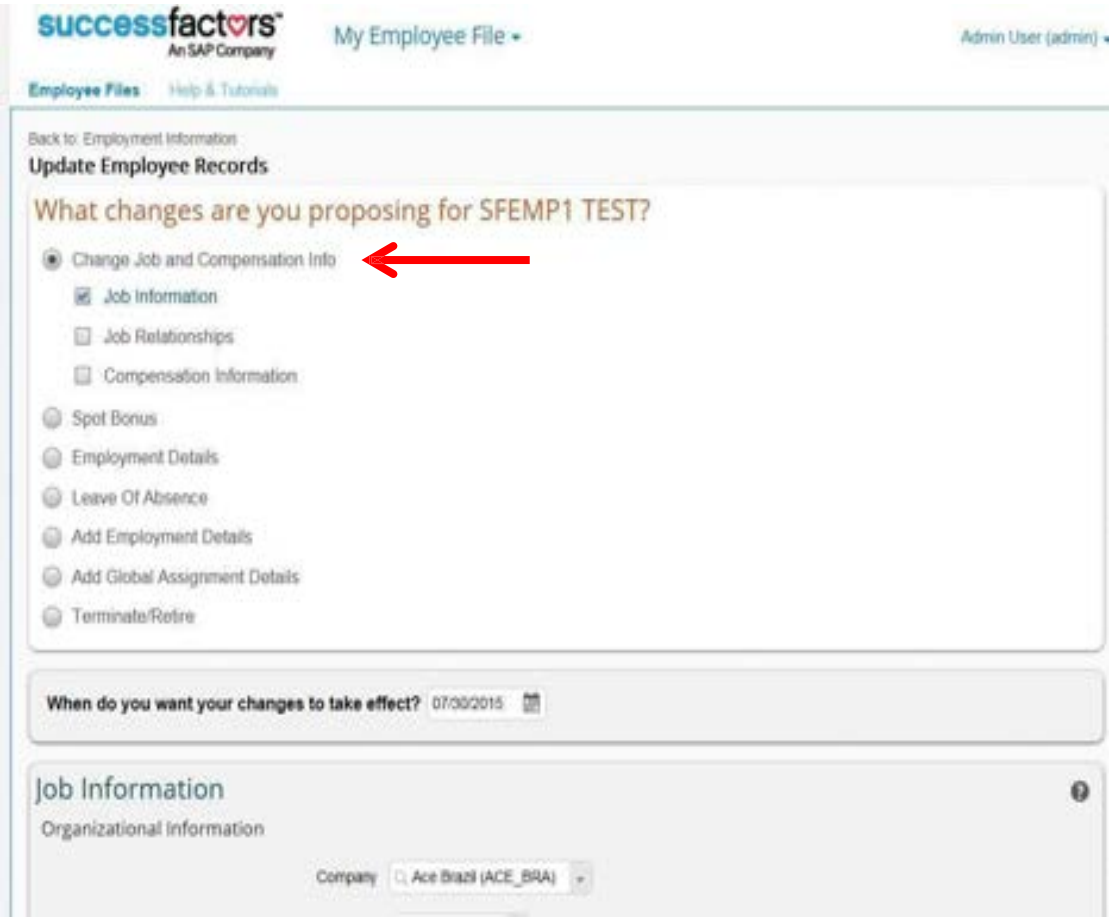


© 2019 SAP SE or an SAP affiliate company. All rights reserved.

2.1.2 Change Employee Job Data

Figure 3 shows an example of how you change employee job information in SuccessFactors. The data that you enter here is transferred to SAP Cloud Integration.

Figure 3: Change Employee Data in SuccessFactors

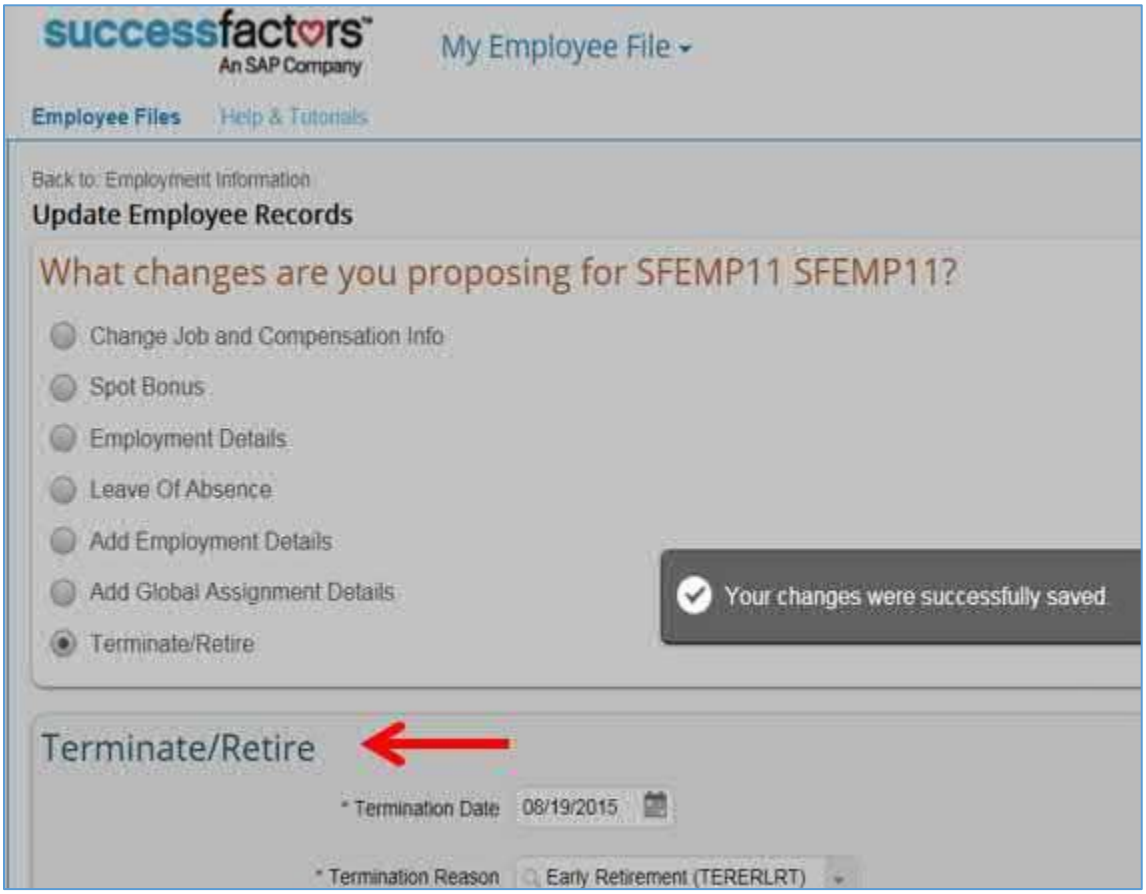


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2.1.3 Terminate Employee

Figure 4 shows an example of how you terminate an employee in SuccessFactors. The data that you enter here is transferred to SAP Cloud Integration.

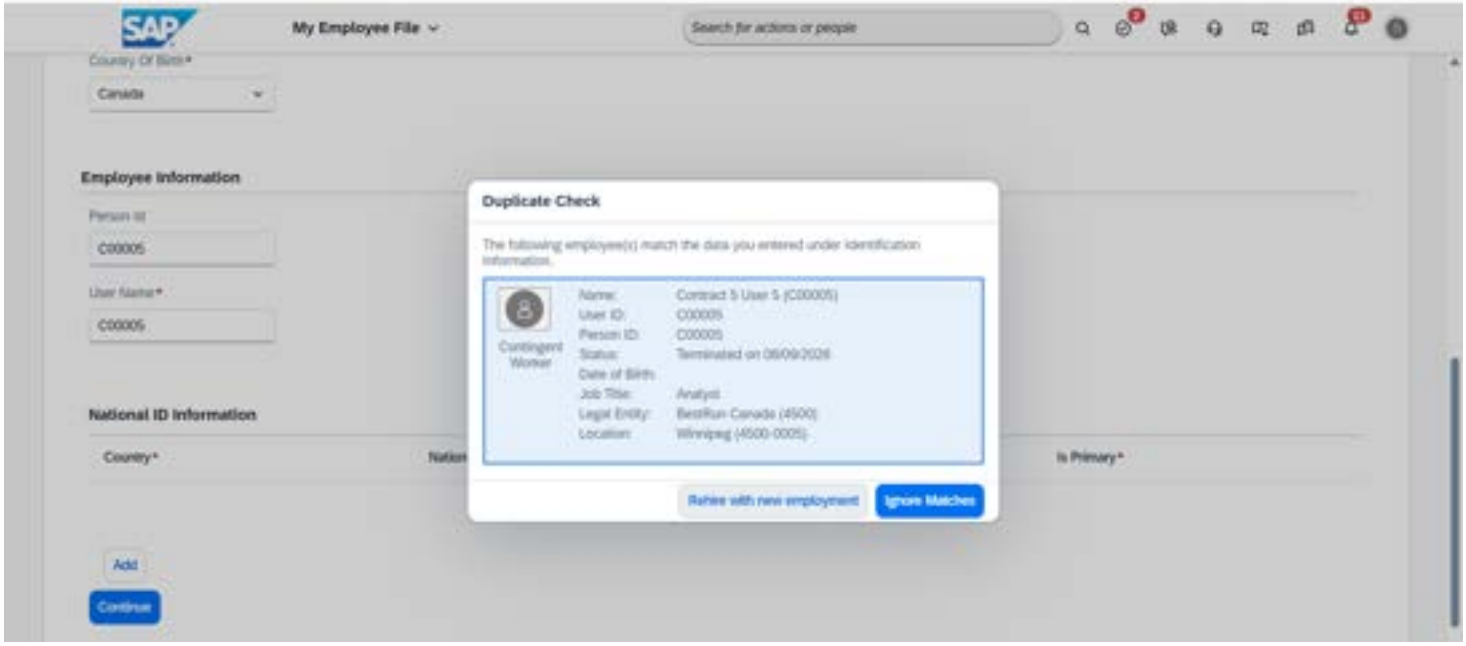
Figure 4: Terminate Employee in SuccessFactors



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

2.1.4 Rehire Employee

The contractual employee can be rehired as permanent employee or you can rehire already terminated employee.
There will be multiple employments for termination of old employment and rehire with new employment. This will create two Access Requests in GRC Access Control.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

3 Configuring SAP SuccessFactors Employee Central

SAP SuccessFactors Employee Central must be configured as described in the *Employee Central Master Guide*. In addition, the *Compound Employee SOAP API* must be enabled as described in the *Implementing the Compound Employee API* available at *http://help.sap.com/hr_api/*.

Note

For more information about how to set up Employee Central, refer to the *Employee Central Master* at *http://help.sap.com/hr_ec?current=hr_ec#section4*.

3.1 Web Service Setup

The *Compound Employee API* uses the *SF API* operations login and logout. You must enable the Application Programming Interface, which uses the Employee Central Compound Employee API to replicate the employee master data from Employee Central to SAP Access Control.

Procedure

1. Login to *Provisioning* using your provisioning URL. The access URL differs for different data centers. The URL and users will be provided to you by SAP. See the example below for a sample URL.

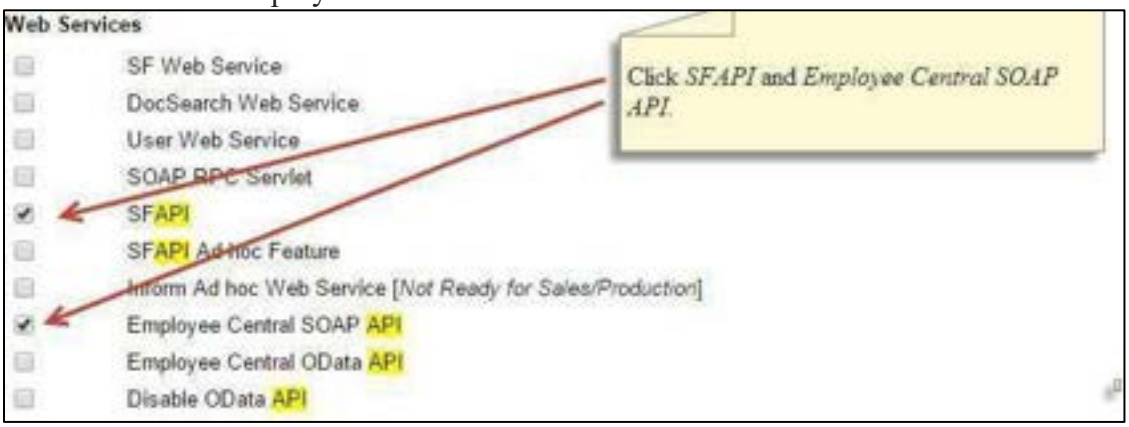
   Example

   https://salesdemo4.successfactors.com/provisioning_login

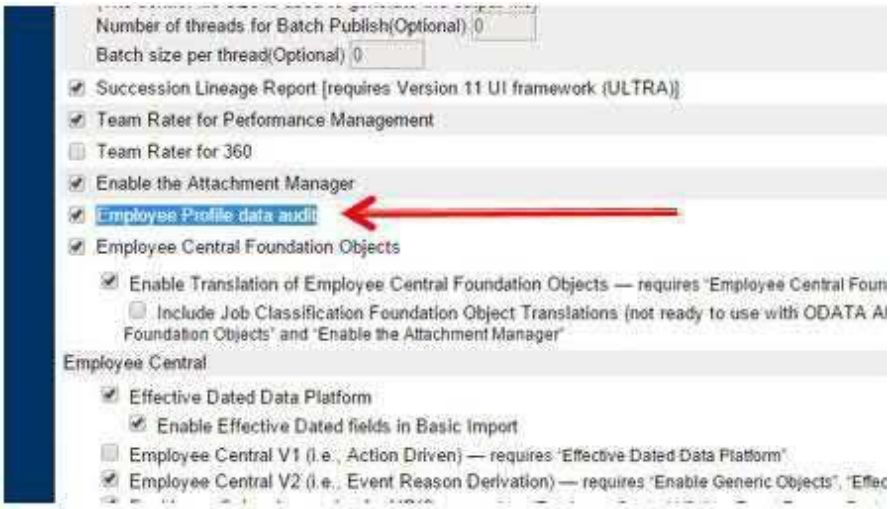
   Once signed on, you see all the companies assigned to your name.
2. Click to choose your company. In the sample screenshot, this is *ACE1321*.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

3. Click Company Settings.
4. Scroll down to *Web Services.*
5. Click SFAPI and Employee Central SOAP API to select them.



6. Create the API Login User.
   On the same page as the *Web Service Settings* above, scroll down or search this page for *Employee Profile data audit* and select the checkbox.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

7. Create the API Login User *SFAPI* by filling in the fields as indicated below.

1. Click the *Create Admin* button.
2. Click *Save.*
3. Define role-based permissions for the API user as described in section 3.2.1.

Note

This configuration is typically done by SAP consultants, not by customers.

Note

You must activate the data audit log to record all employee data changes; otherwise, you will receive an error message.

4. On the Company Settings page, search for **Enable performance improved XML rendering**.
5. Select the checkbox enable performance improved XML rendering.

Recommendation

For more features and improved performance, we strongly recommended that you make this setting.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

3.2.1 Set Permissions for API User

Procedure

1. Go to *Admin Center*. In the *Tools* search field, enter *Manage Permission Role* and add the following permissions to a role granted to your API user:
    a. General User Permission: API User Login
    b. Employee Central API: Employee Central HRIS SOAP API

a)

b)

Caution

These permissions give the user access to use the API. They do not grant any user interface logon.

2. Assign the API user to a group and adjust the corresponding permission settings.
3. You can test that the API works by using tools such as the SOAP UI tool.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4 Configuring SAP Access Control

4.1 Prerequisites

The following are prerequisites to configuring SAP Access Control for integration with SAP SuccessFactors Employee Central.

- Configure SuccessFactors Employee Central:

  a) Employee Central must be configured as described in the *Employee Central Master* guide.
  b) The *Compound Employee SOAP API* must be enabled as described in *Implementing the Compound Employee API* available at *http://help.sap.com/hr_api/*.

- SAP Cloud Integration is set up.
- The following SAP Access Control components are installed:

For this component ...	... you need this software component version
SAP NetWeaver	SAP_BASIS 740 SP05 or higher
SAP Access Control	GRC 10.1 SP 10 or higher

Note

See the section *Related Guides* for more information.

- The required SAP Notes are installed

The following note must be added on top of SAP Access Control 10.1 SP 10:

SAP Note Number	Title	Description	Contained in Support Package
2180164	Integrate SuccessFactors Employee Central with SAP Access Control	This note supports the integration of SAP SuccessFactors Employee Central with SAP Access Control for the following three scenarios:	SAP Access Control 10.1 SP 10

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

		• A new employee is added • Employee job data is changed • Employee is terminated	

Note

Make sure that you have the current version of each SAP Note, which you can find on SAP Service Marketplace at https://support.sap.com/notes.

To search for SAP Notes that are relevant for the integration of SAP SuccessFactors Employee Central to SAP Access Control, in the application area enter GRC-SAC-ARQ and GRC_SAC_ARQ-SF.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4.2 Activating the Web Services

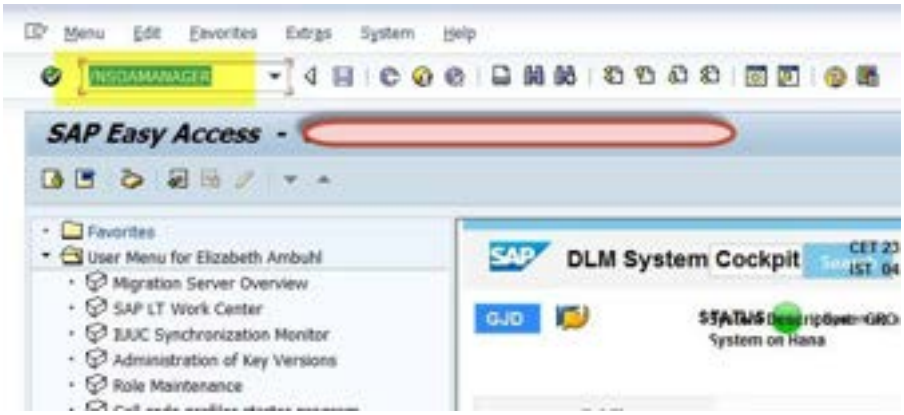
The following Web services must be activated in SAP Access Control:

HR Trigger Scenarios	Object Type	Service Interface Name (Web Service Definition Name)	Software Component
Add New Employee Change Employee Job Data Terminate Employee	Employee change details	**`GRAC_SFEC_HR_TRIGGER`**	GRCFND_A

Follow the steps below to activate the necessary web services.

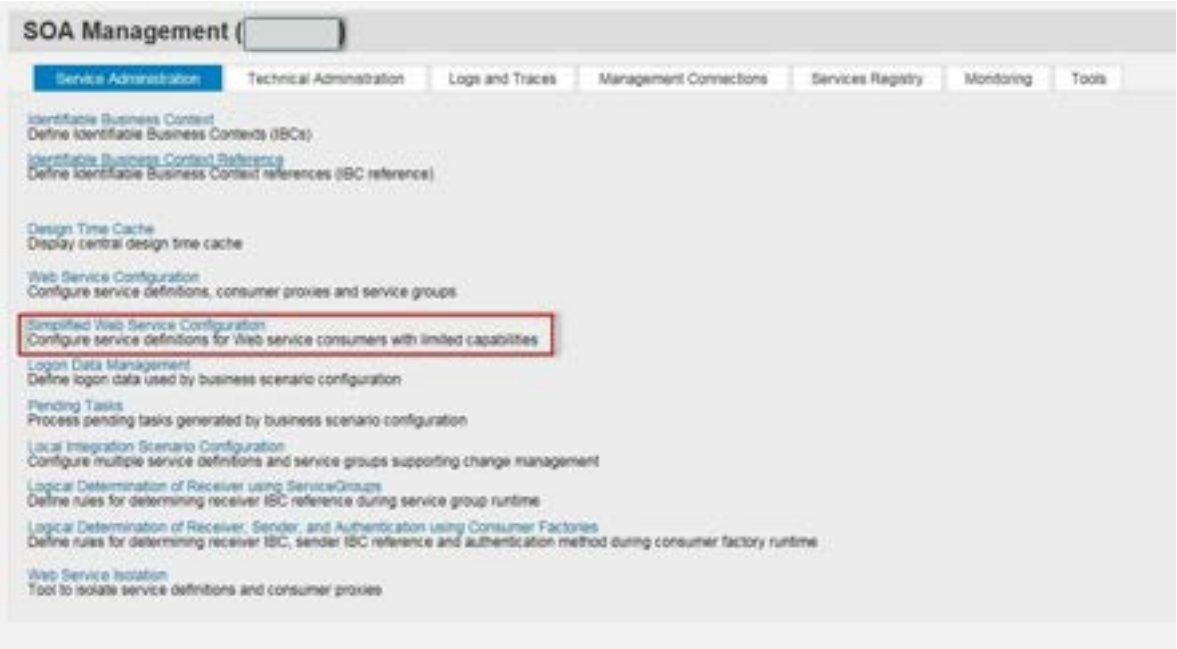
Procedure

1. Enter transaction *`SOAMANAGER`*.

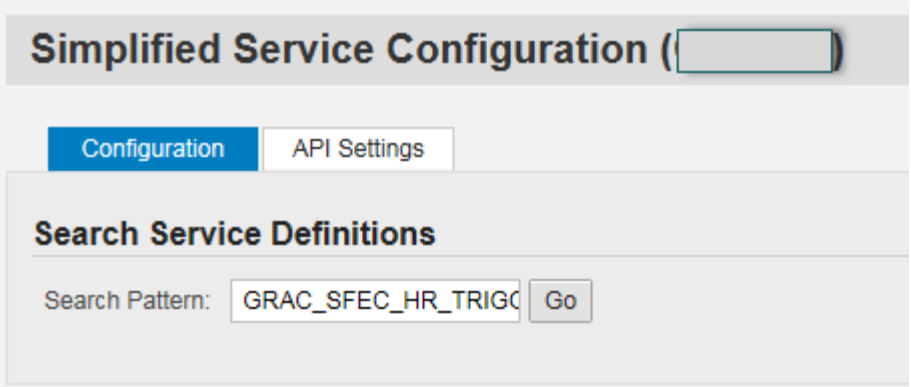


© 2019 SAP SE or an SAP affiliate company. All rights reserved.

2. Click *Simplified Web Service Configuration*.



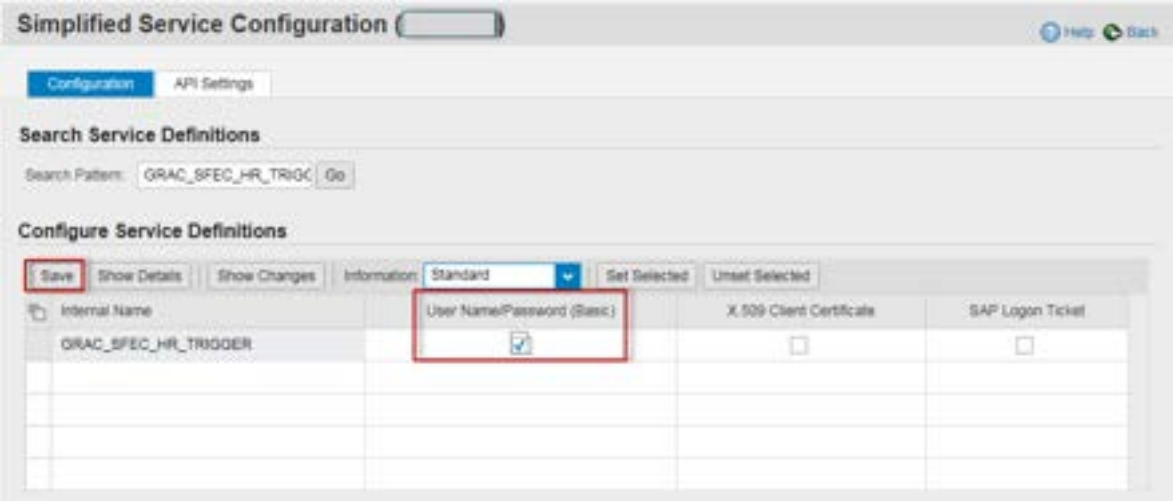
3. Enter the Web service definition name, for example, **`GRAC_SFEC_HR_TRIGGER`**.



4. Click *Go*.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5. Select the *User Name / Password (Basic)* checkbox



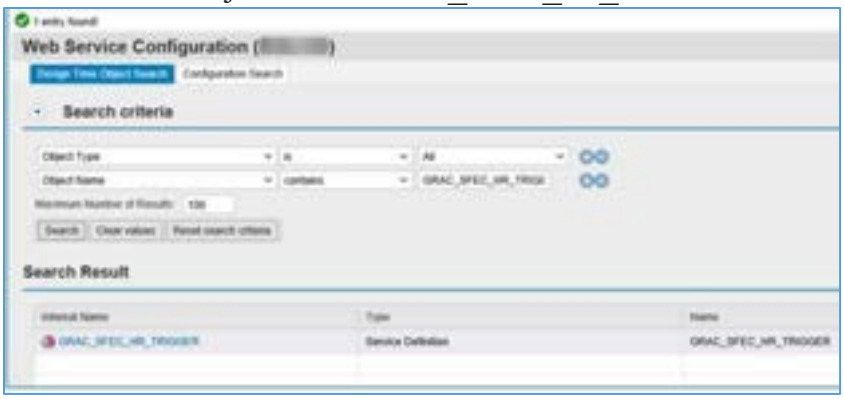
6. Click *Save*. The Web Service is activated.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

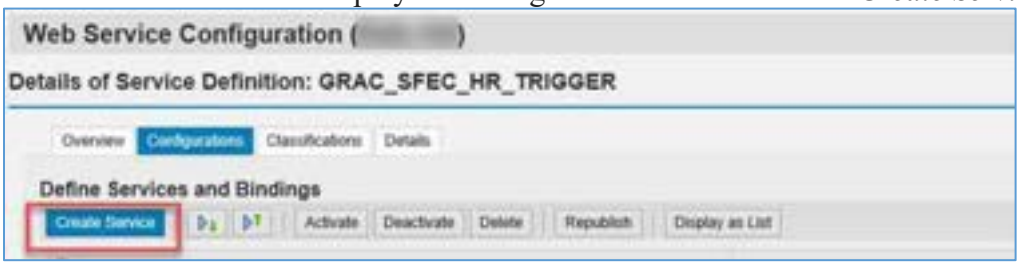
4.3 Create Binding for WS

1. Execute transaction *SOAMANAGER* and click **Web Service Configuration**.

2. Search for the Object Name: *GRAC_SFEC_HR_TRIGGER*.

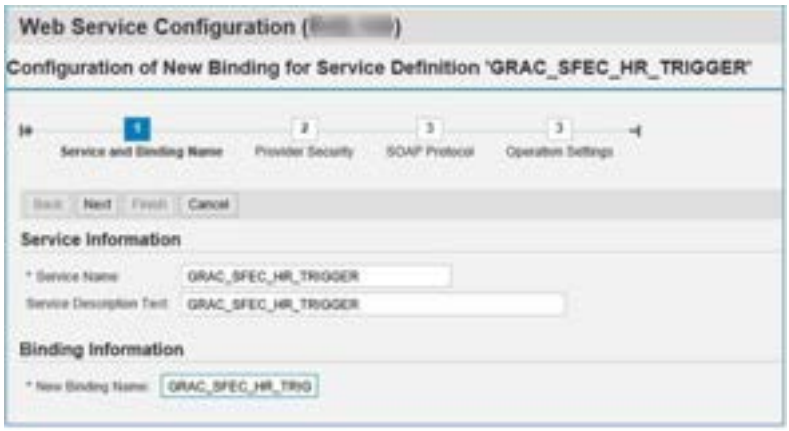


3. Click the web service to display the configuration screen and click *Create Service*.



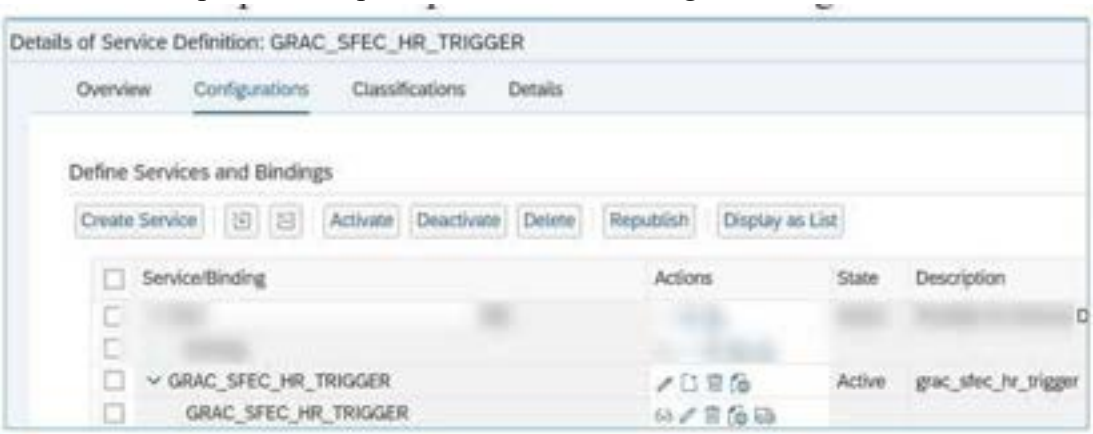
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4. On the **Service and Binding** screen, fill in the *Service Name* and *New Binding Name* fields and then click *Next*.



5. On the Provider Security screen, select **Transport Channel Authentication = User ID/Password**, and then click *Next*. You can leave all other attributes as default.
6. On the SOAP Protocol screen, leave the defaults, and click *Next*.
7. On the Operation Settings screen, leave the default values, and click *Finish*.

This is an example of a completed web service binding.



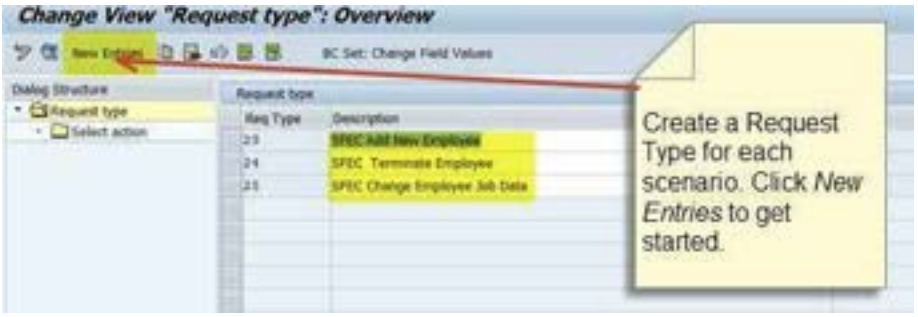
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.4 Creating Request Types

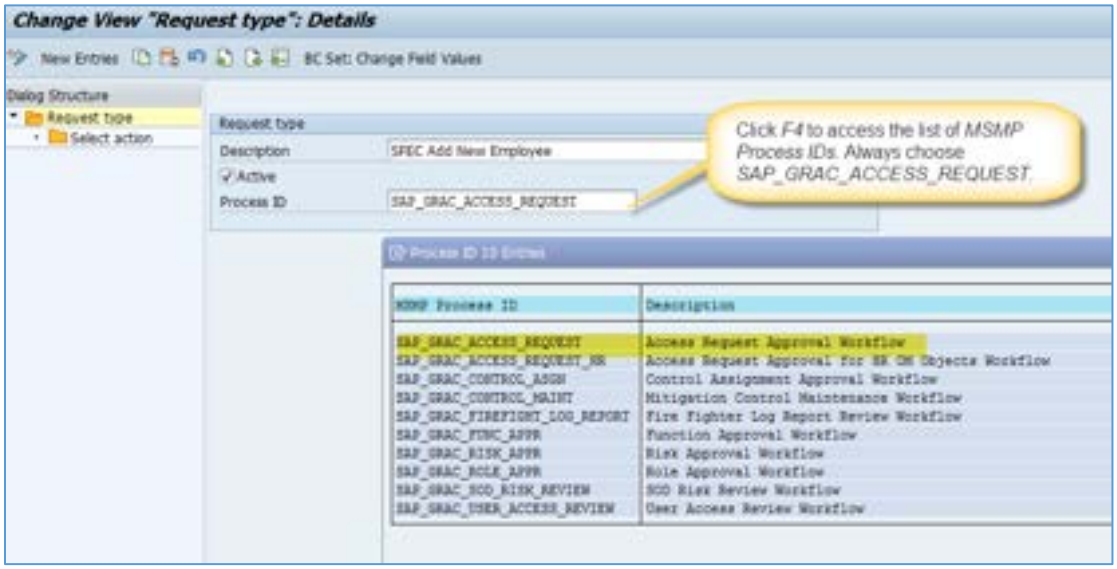
In the SAP Implementation Guide (IMG), you must define an SAP Access Control request type for each of the three SuccessFactors integration scenarios: Add New Employee, Change Employee Job Information, and Terminate Employee.

Procedure

1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ Access Control ➔ User provisioning➔ Define Request Type,
2. Click New Entries.

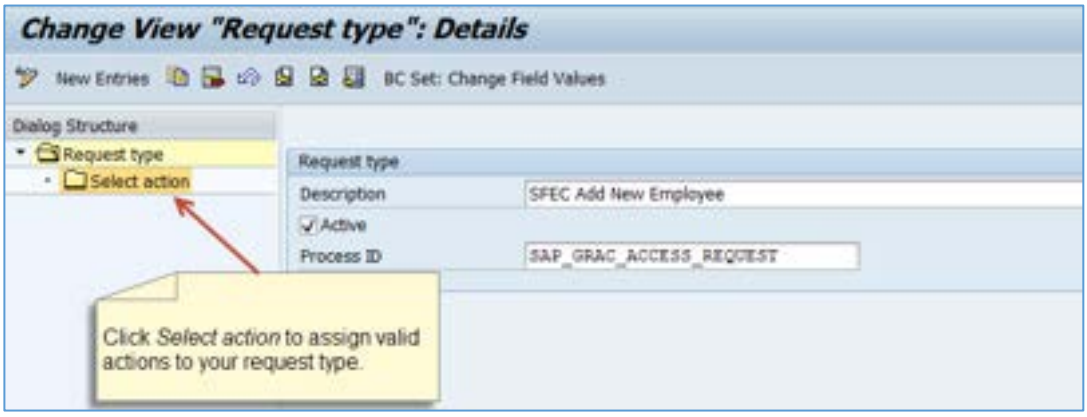


3. Add a Description.
4. In the *Process ID* field, click *F4* on and choose *SAP_GRAC_ACCESS_REQUEST*.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

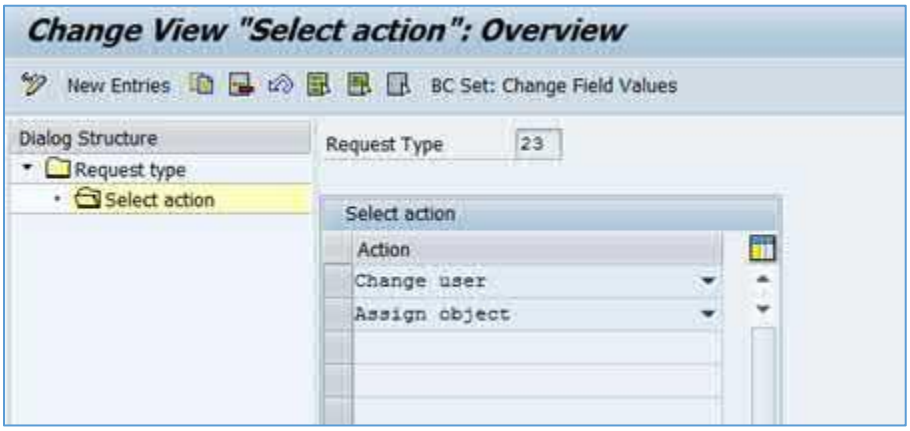
5. Assign the appropriate actions to each request type as illustrated in the screenshots below.



Note

For information about the possible *Actions*, see the IMG node documentation.

a) Add New Employee: assign the following actions:
   i. Change User
   ii. Assign Object

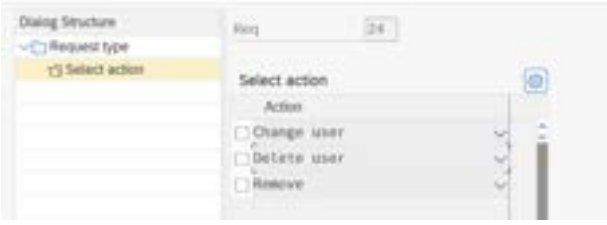


© 2019 SAP SE or an SAP affiliate company. All rights reserved.

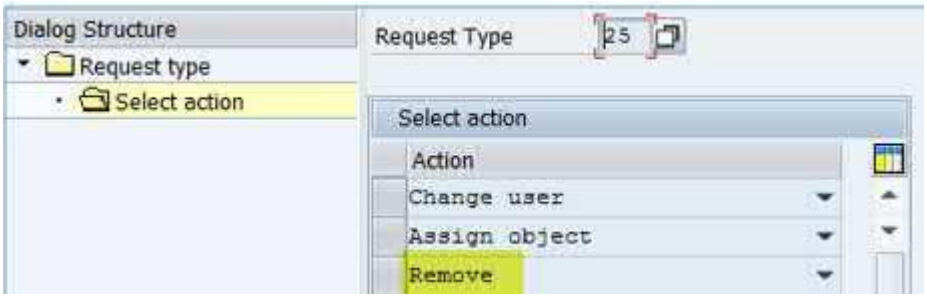
b) Terminate Employee: assign the following actions:
   i. Change user / Change & lock user
   ii. Delete user
   iii. Remove

Caution

Future termination is not supported. The employee is terminated immediately.



c) Change Employee Job Data: assign the following actions:
   i. Change user
   ii. Assign Object
   iii. Remove



Caution

The Employee Change request type should always include the action *Remove*.

6. *Save* your entries.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4.5 Creating Request Priorities

In the IMG, you must designate a priority for each of the three integration scenarios. The *Request Priority* is used in workflow configuration.

Procedure

1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ Access Control ➔ User provisioning➔ Maintain Priority Configuration.
2. Click *New Entries* and add any necessary priority types.

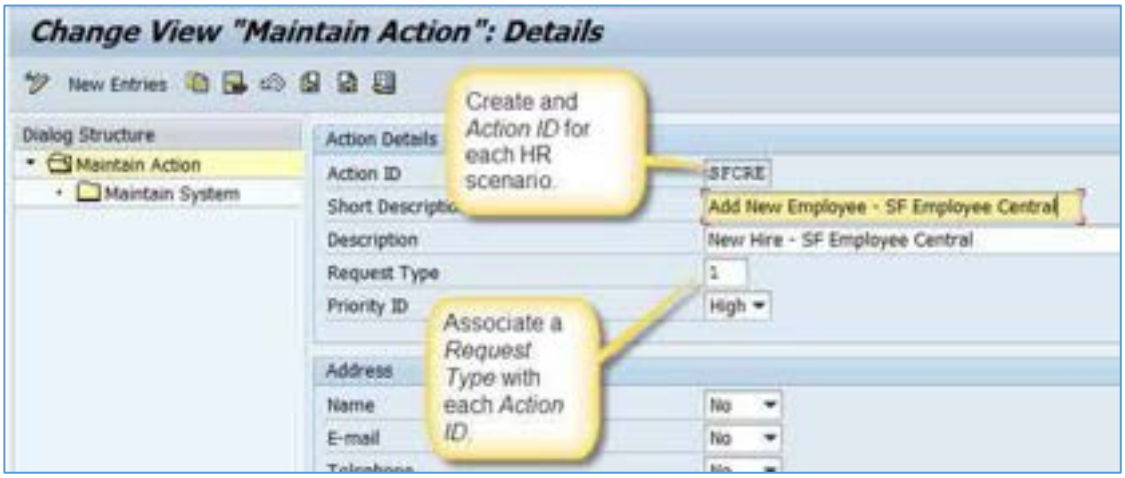
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.6 Maintaining Settings for HR Trigger

In the SAP Implementation Guide, you must define a separate action for each of the three SuccessFactors integration scenarios. You do this by maintaining the HR trigger actions.

Procedure

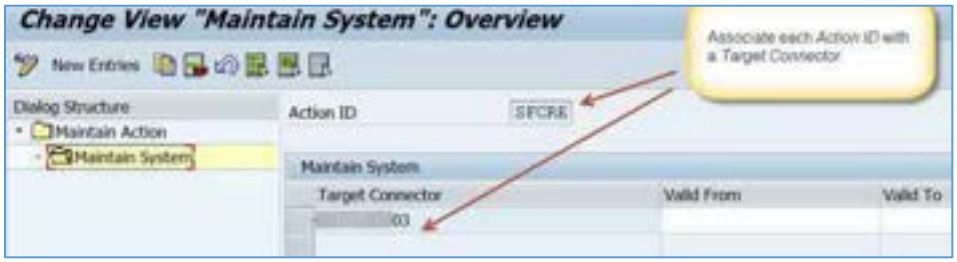
1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ Access Control ➔ User provisioning➔ Maintain Settings for HR Trigger
2. On the screen Change View "Maintain Action": Overview, add an entry for each of three scenarios: Add New Employee, Change Employee Job Data, and Terminate Employee:
   a) Choose New Entries.
   b) Fill in the Action ID, Description, Request Type, and Priority ID for each scenario.



Note

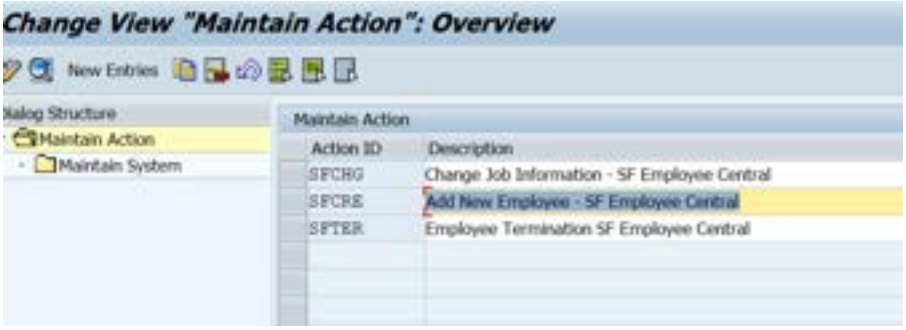
The *Request Types* and *Priority IDs* are different for each customer depending on configuration.

3. Click *Maintain System* to assign a target connector to each *Action ID.*



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4. *Save* your entries. The results will look similar to the example below:



You have now defined the actions for each integration scenario.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.7 Configuring the BRF+ Application SFEC_HR_TRIGGER_APP

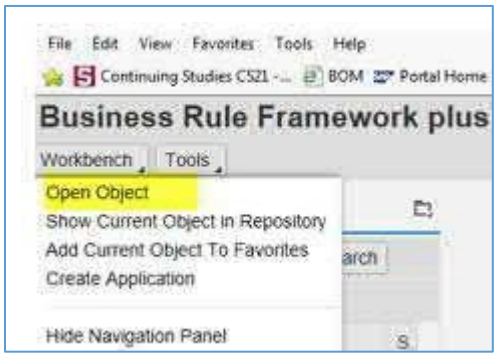
This BRF+ application determines the SAP Access Control actions: create, change, or terminate. You start by evaluating the delivered BRF+ function.

Evaluate the Delivered Function

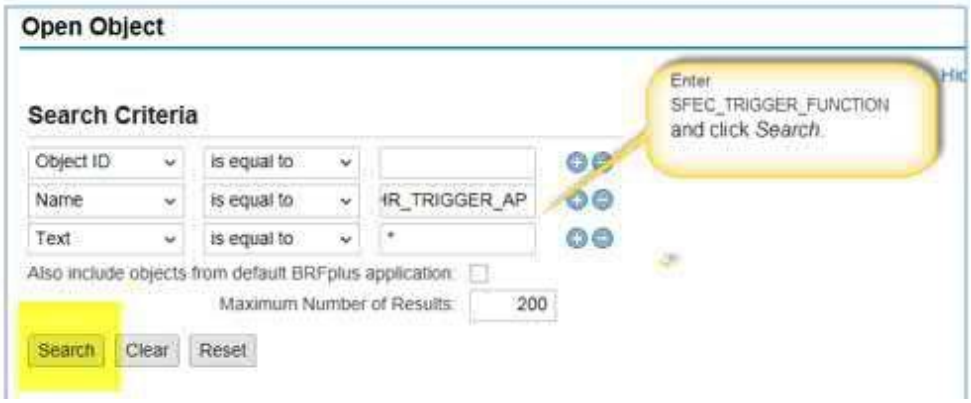
You must first decide whether you can use the BRF+ application SFEC_HR_TRIGGER_APP as delivered or if you need to copy and change it. Follow the steps below to view the delivered function.

Procedure

1. In the SAP system, enter transaction *BRF+* to access the Business Rule Framework.
2. Choose Open Object.

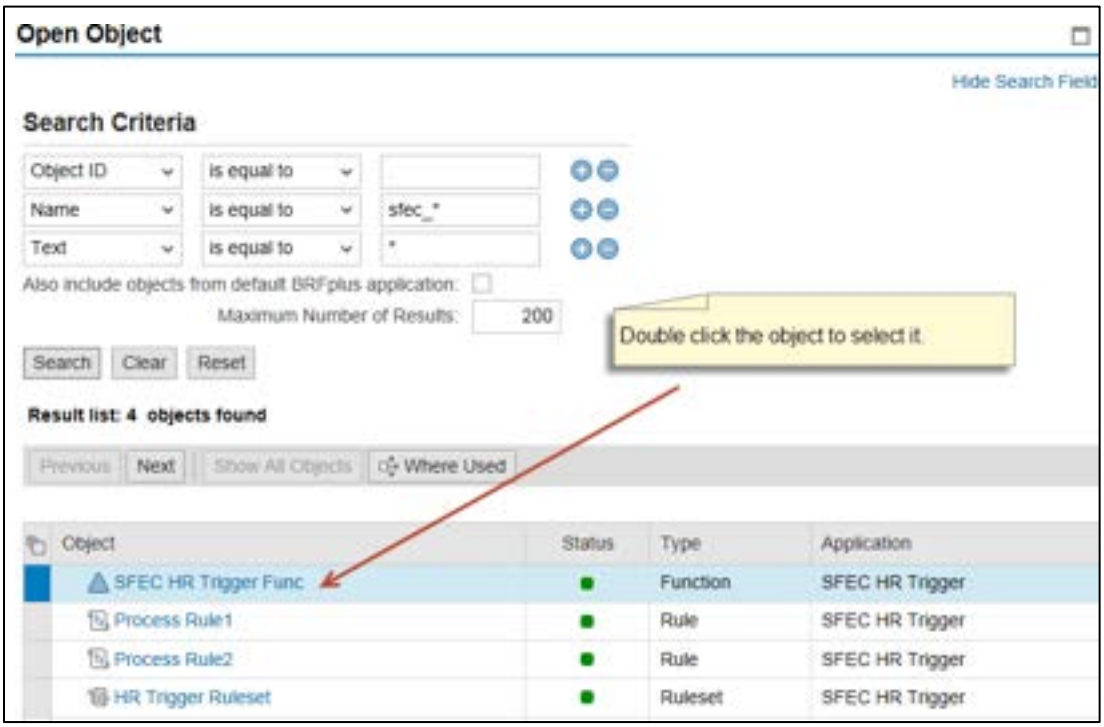


3. Search for the object SFEC_TRIGGER_FUNCTION.

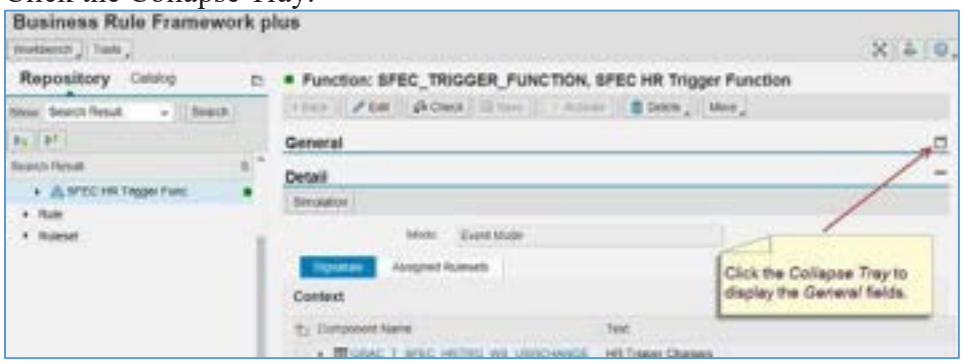


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4. BRF+ retrieves the function.

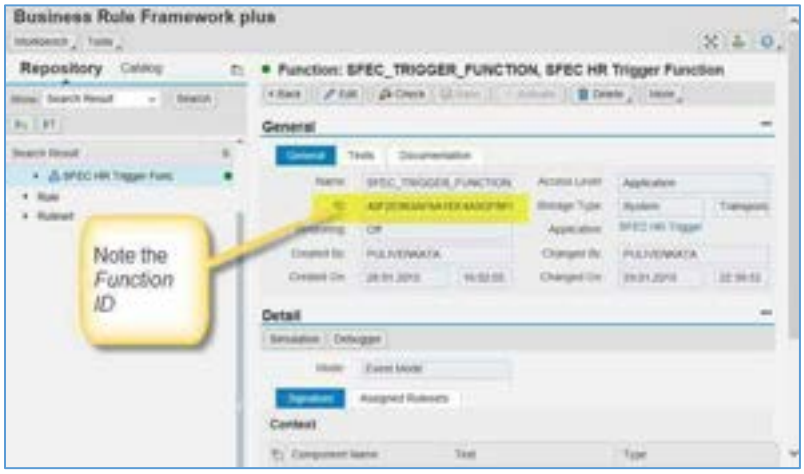


5. Click the Collapse Tray.

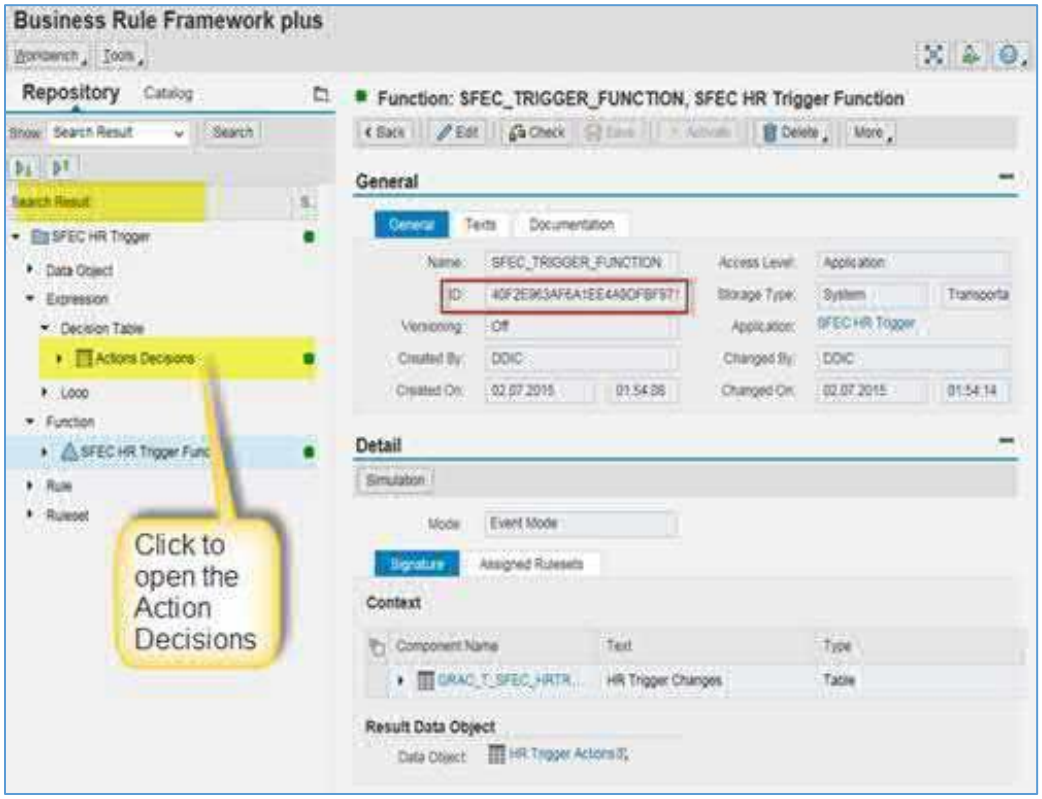


© 2019 SAP SE or an SAP affiliate company. All rights reserved.

6. Make a note of the *Function ID* for later use.

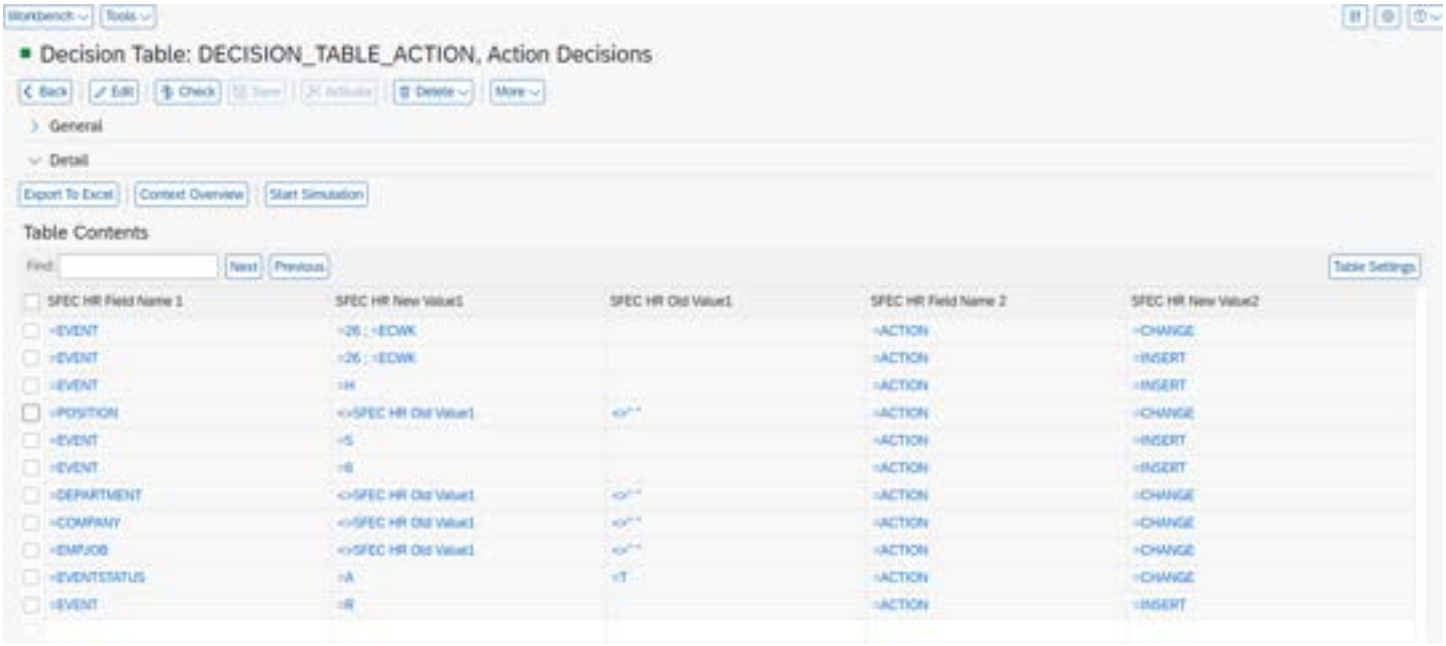


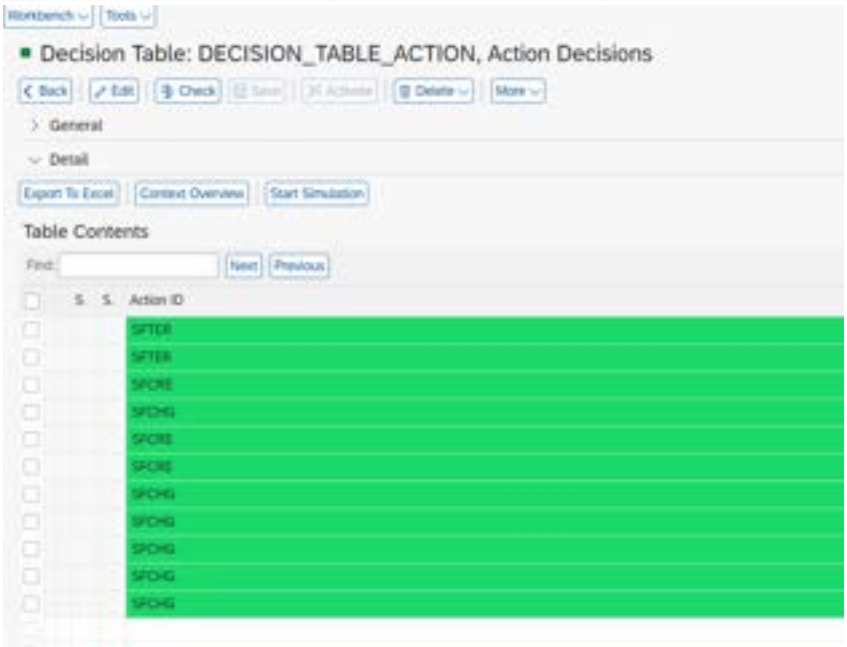
7. In the *Search Result* box, scroll up. Expand the *Expression* node and then expand the *Decision Table* node.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

8. Click Actions Decisions to view the Actions Decisions table.





© 2019 SAP SE or an SAP affiliate company. All rights reserved.

9. Decide if the delivered action decisions work for you. If not, you must create your own.

Note

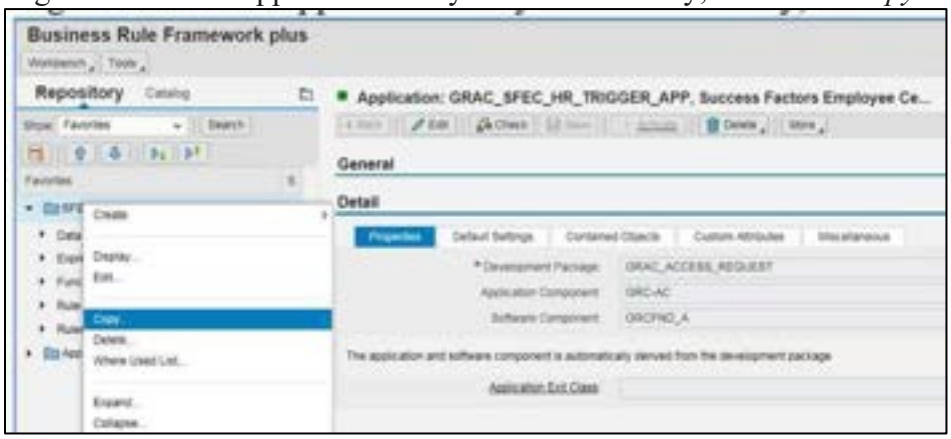
You can use the delivered configuration or copy the BRF+ configuration and modify it for your needs.

a)

Modify the Delivered Decision Table

If the delivered actions do not work for you, you must copy the delivered application: SFEC_HR_TRIGGER_APP and modify the actions to suit your needs.

1. Right-click on the application that you want to modify, and select *Copy*.



2. On the Copy Application screen, give the *Target Application* a name and description.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

3. Change the *Decision Tree* entries to suit your needs.

   Note

   For more information, see the section *Configuring the BRF+ Decision Table*.

   Caution

   Once you copy the BRF+ application, you can change the decision table entries. You cannot change the delivered BRF+ application.

4. Click *Copy*.

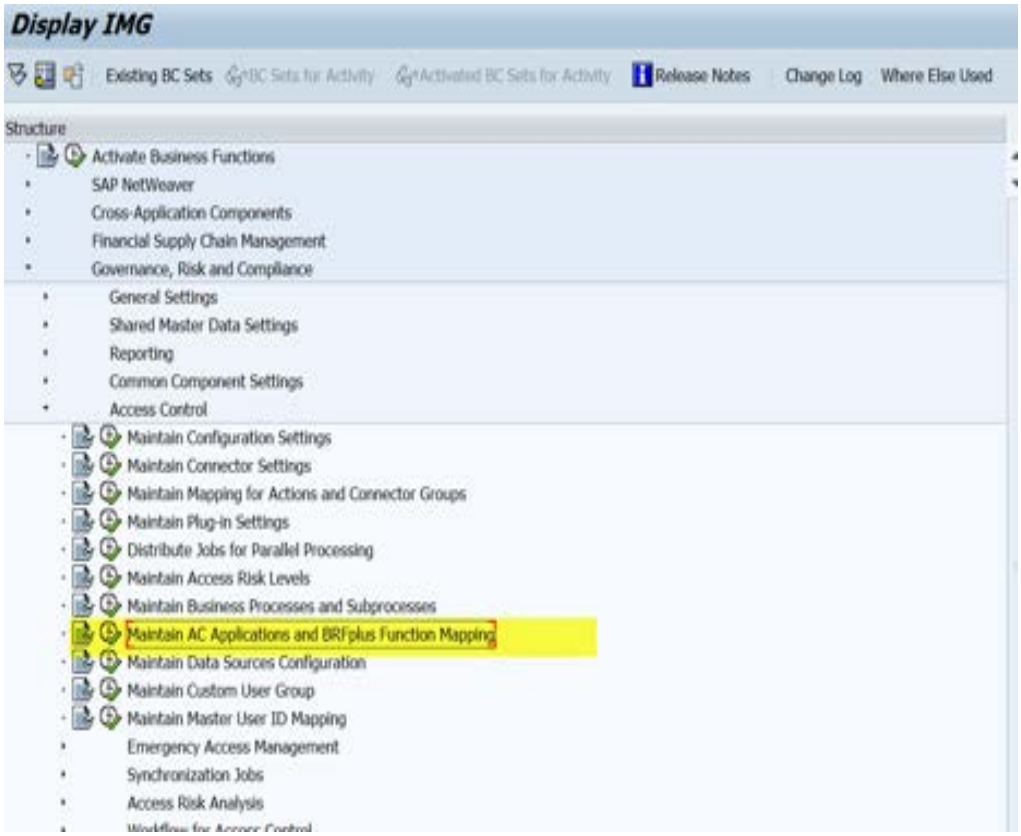
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.8 Mapping the BRF+ Function ID to SAP Access Control

Once you have defined your BRF+ application, you must map its BRF+ function ID to an SAP Access Control's *Application ID*. The SAP Access Control Application IDs are delivered.

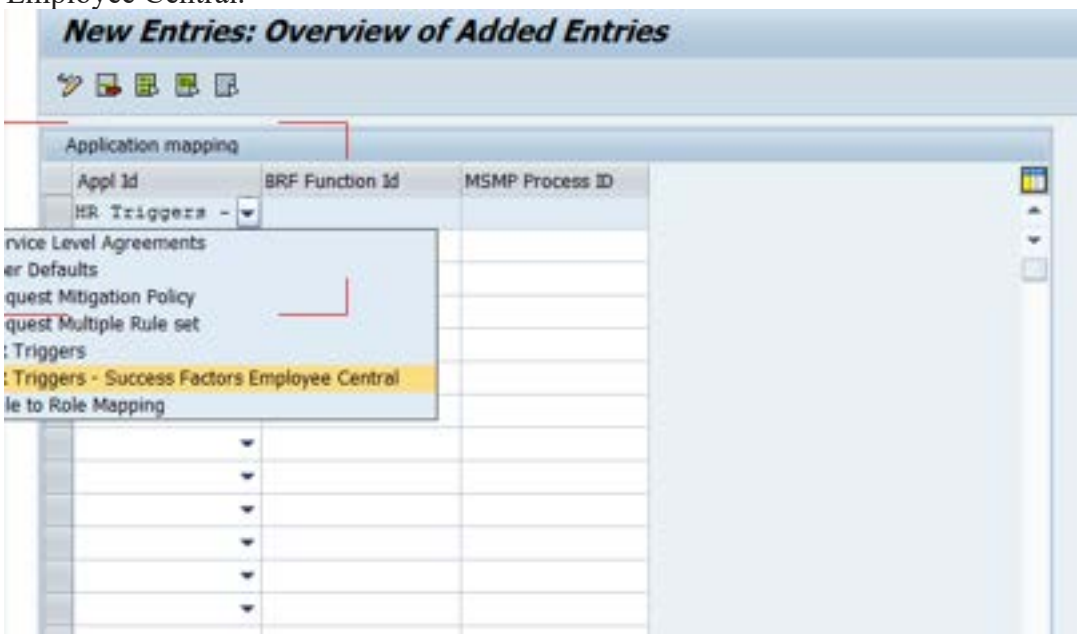
Procedure

1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ Access Control ➔ Maintain AC Applications and BRF+ Function Mapping

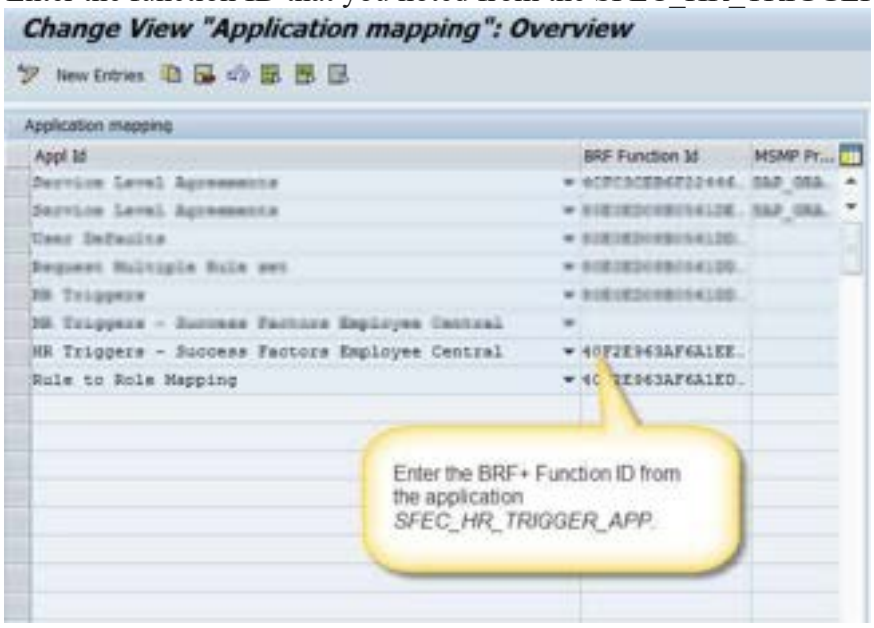


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2. Choose New Entries.
3. Click the drop down menu for Appl ID and select HR Triggers – SuccessFactors Employee Central.



4. Enter the function ID that you noted from the SFEC_HR_TRIGGER_APP.



5. Click *Save.*

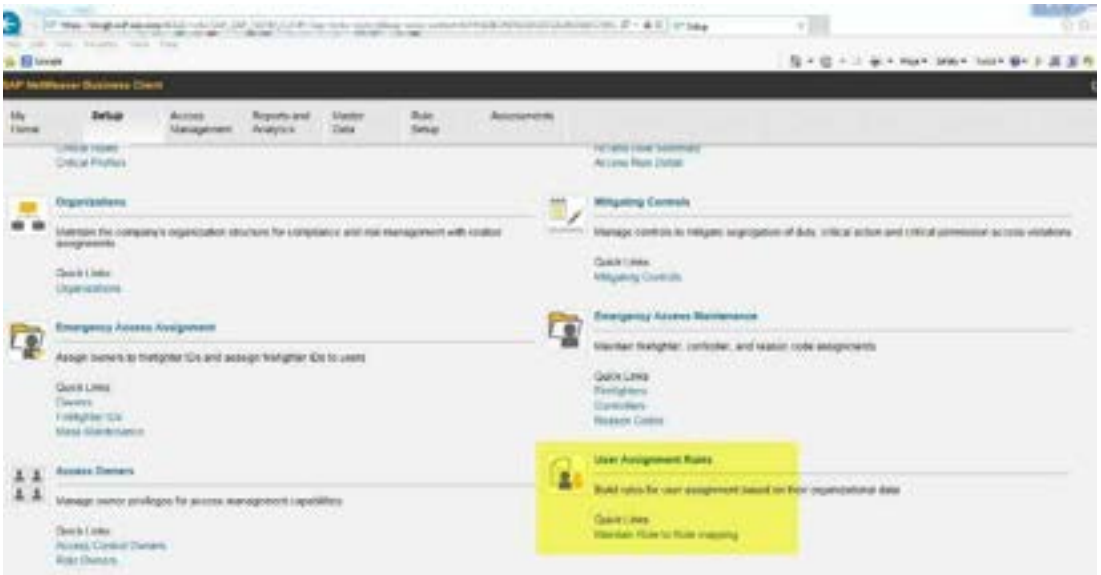
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.9 Maintaining Rule-to-Role Mapping

In SAP Access Control, you create rules for use in BRF+ and map them to roles. This mapping can be done by an administrator or a role owner.

Procedure

1. From SAP Access Control transaction *NWBC*, navigate to *Setup* ➔*User Assignment Rules*.
2. Click *Maintain Rule to Role Mapping* as shown in the screenshot below.



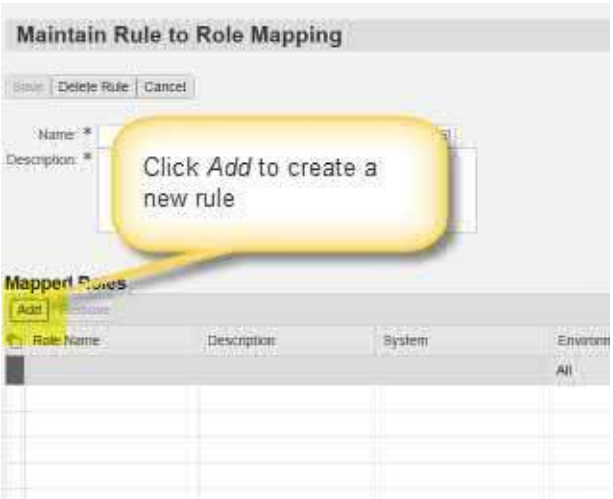
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

3. With the cursor in the *Name* field, press *F4* to display the Rule Search dialog box.

Note

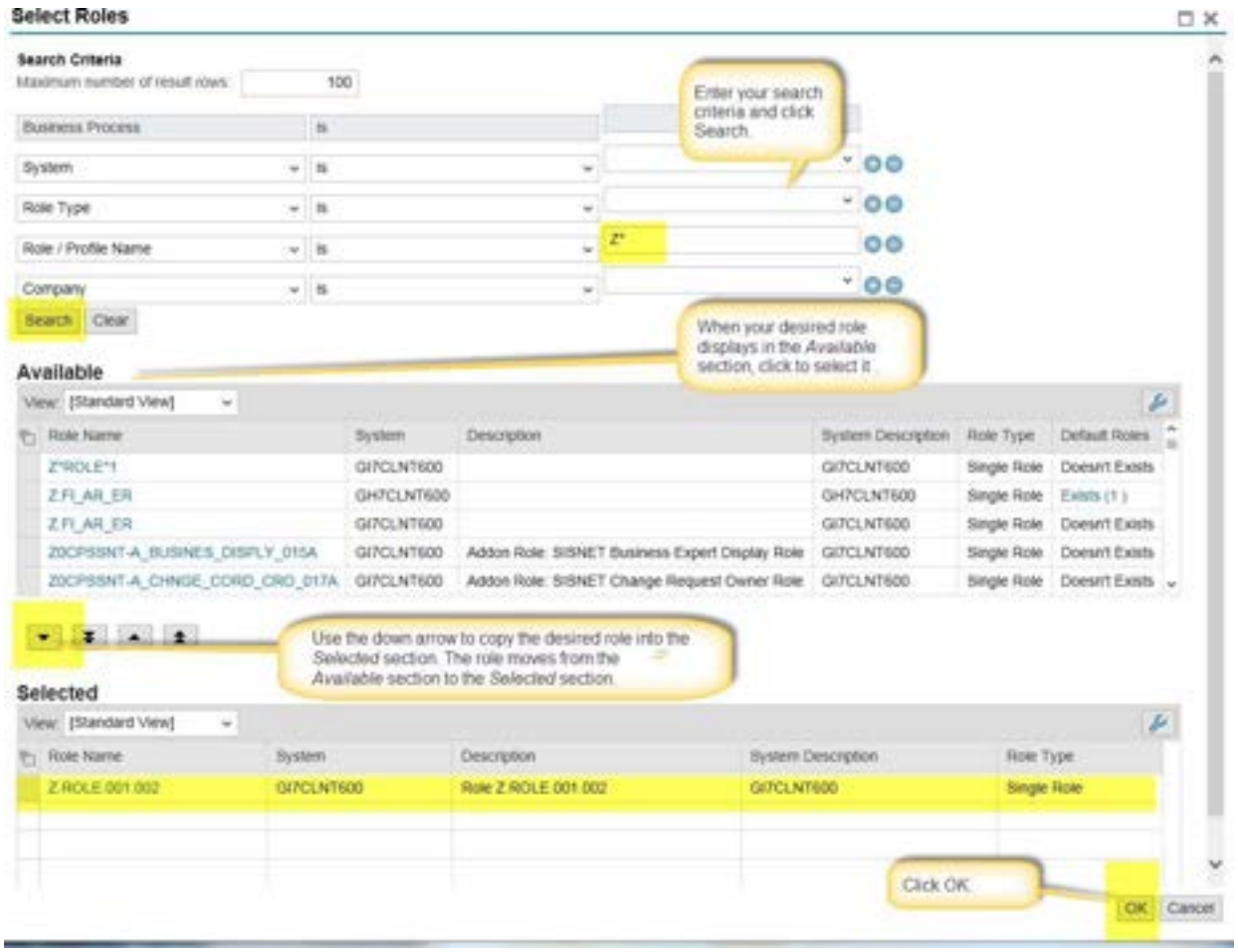
Here you can search all the existing rules in SAP Access Control. If no rules are defined, the search will be empty.

4. To add a new rule, click *Add.*



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5. On the *Select Roles* screen, search for the roles that you want to include in your rule. Enter your search criteria and click *Search*.
6. Select the desired role(s) and click *OK*.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

7. The *Maintain Rule to Role Mapping* screen displays. Give the rule a name and a description.

8. Click *Save.*

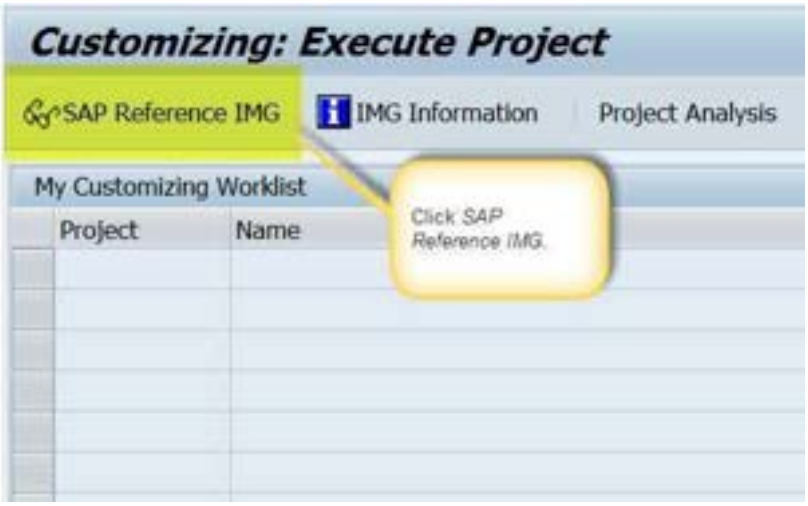
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.10 Generating the BRF+ Function for Access Rule-to-Role Mapping

Once you create the necessary rules for each integration scenario, you must generate a BRF+ application to connect the SuccessFactors events with the correct roles when users are provisioned. This BRF+ application determines which roles to assign to employees based on the employee's attributes.

Procedure

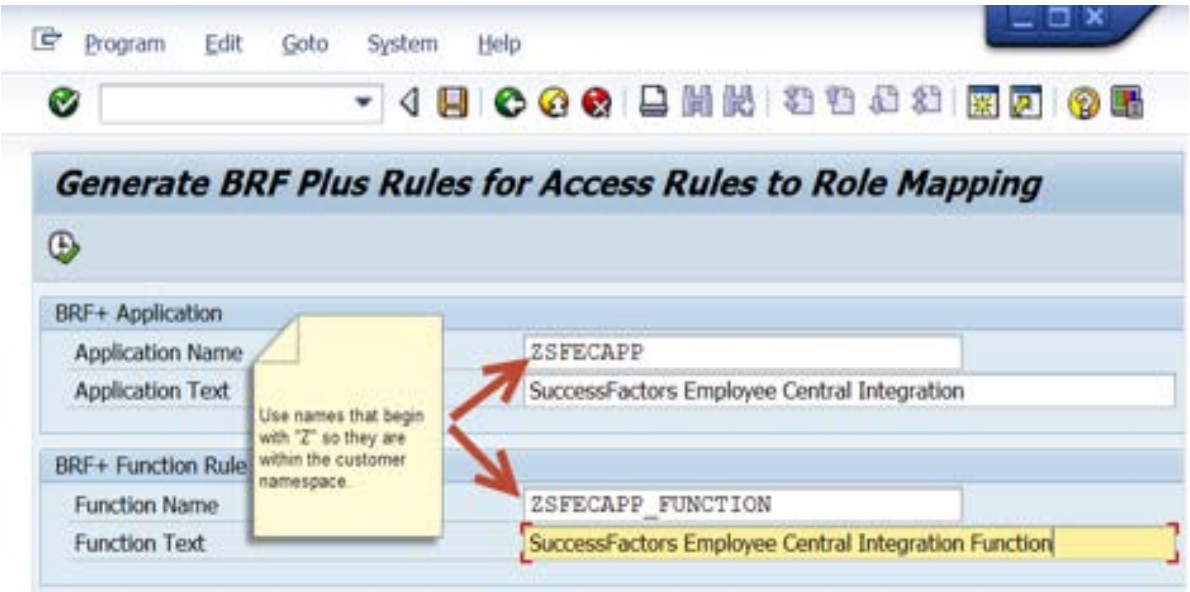
1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ User provisioning➔ Generate BRF+ Function for Access Rules-to-Role Mapping.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

2. The screen Generate BRF Plus Rules for Access Rules to Role Mapping displays.



3. Enter an *Application Name* and description and a BRF+ *Function Name* and description.

   Note

   b) Create names that start with "Z" so they fall in the customer name space.

   c)

4. *Save* your entry. The following screen appears.

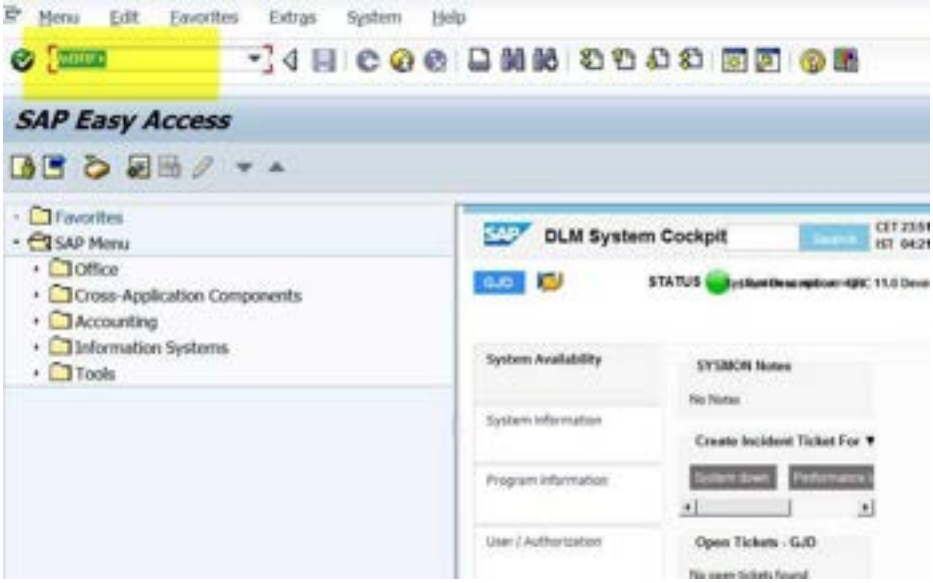
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

4.11 Configuring the BRF+ Decision Table

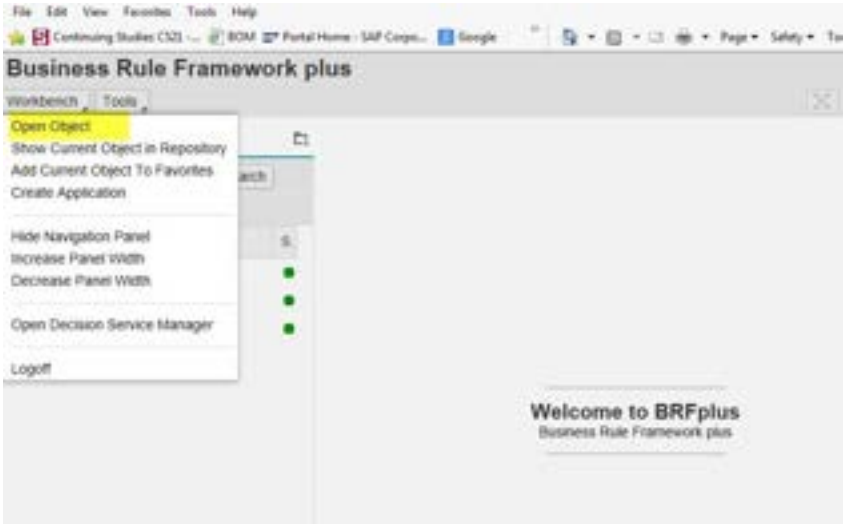
Once you create the BRF+ function in the previous step, you access it and add a decision table.

Procedure

1. Open BRF+ using transaction *BRF+*.

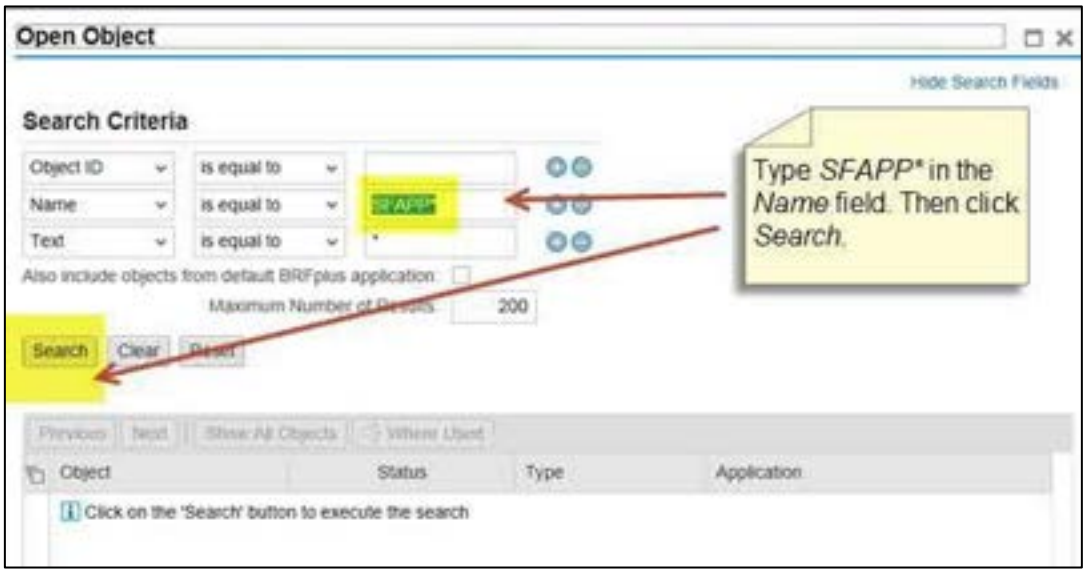


2. Choose Workbench ➔ Open Object.

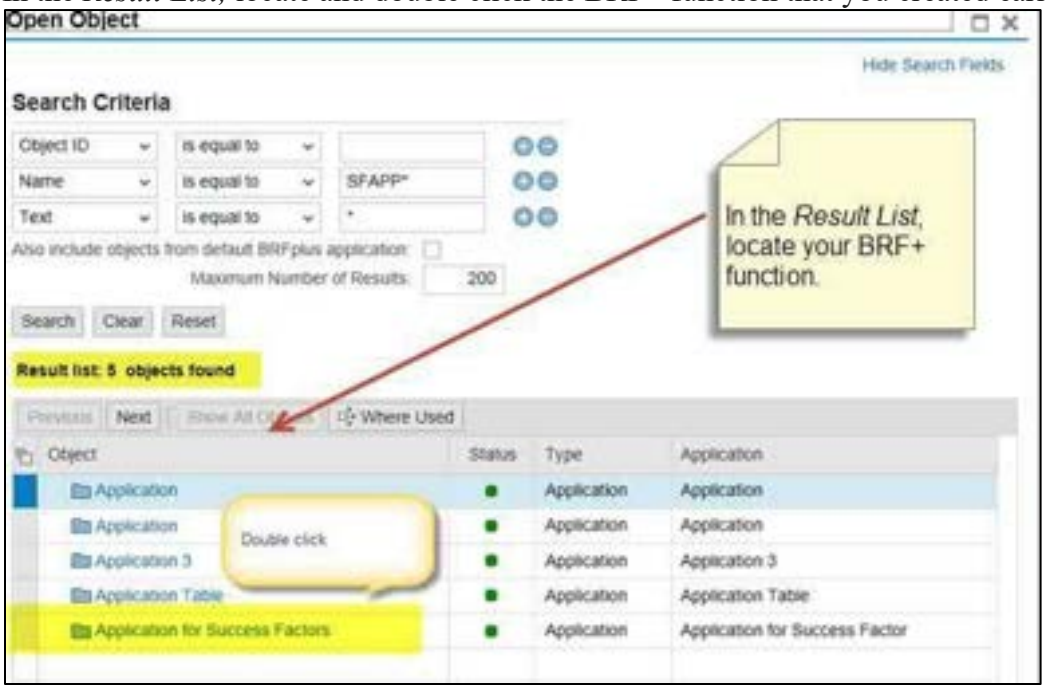


3. Search for *SFAPP**.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

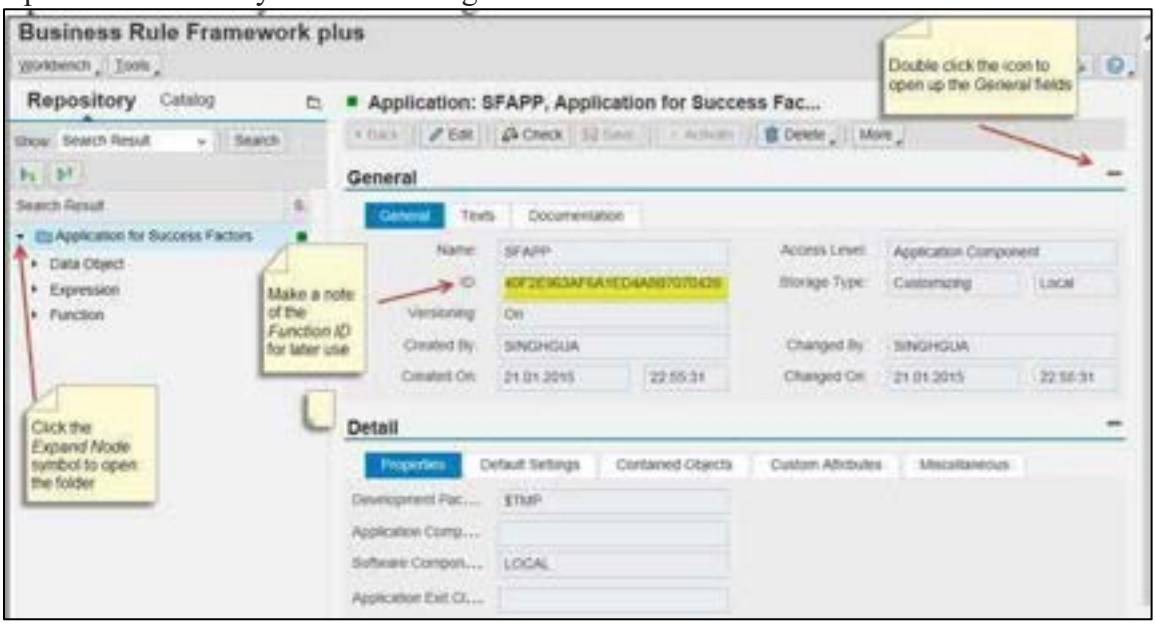


4. In the *Result List,* locate and double click the BRF+ function that you created earlier.

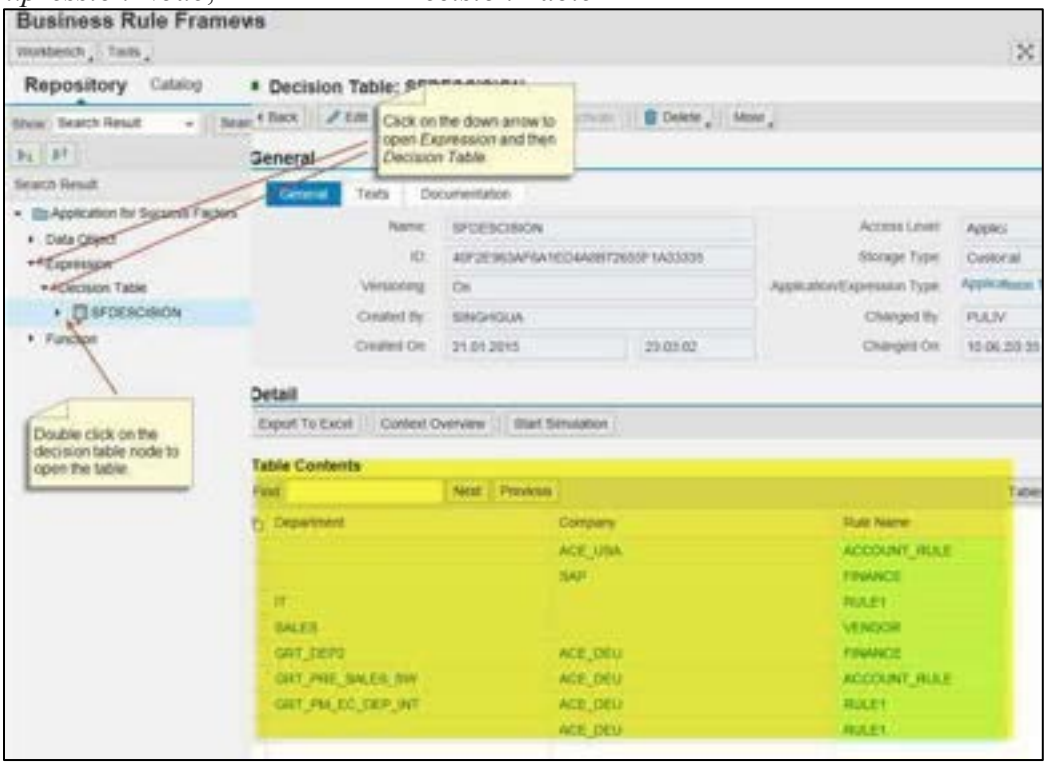


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5. Open the function by double clicking it. Note the *Function ID.*



6. To open the decision table, click *Expand Node* to open the folder, then click the *Expression Node*,and then click *Decision Table*.



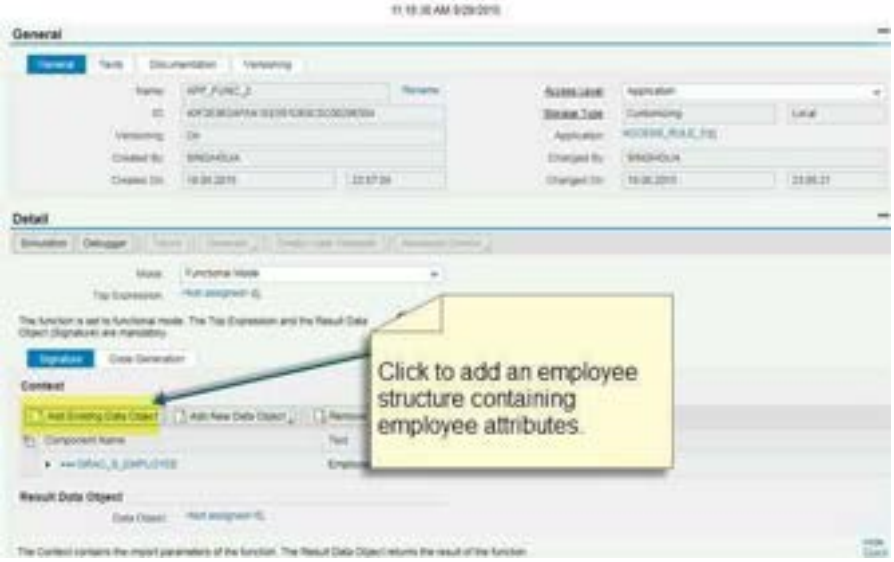
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

You must configure your decision table for this function. The decision table is based on employee attributes that can be selected by clicking the *Table Settings* button.

Example

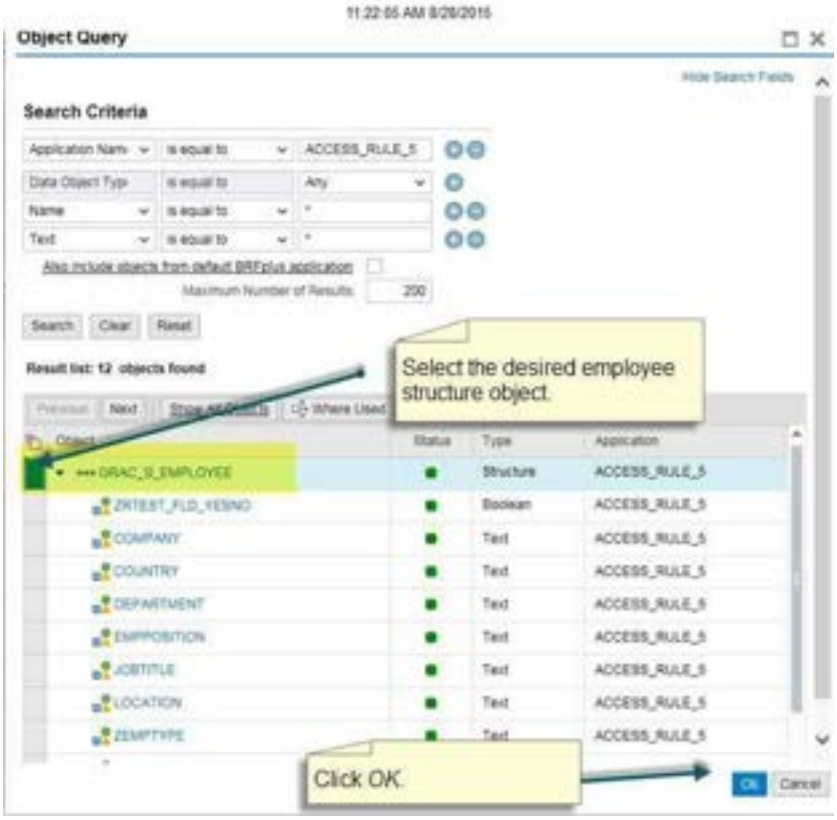
The example below shows how to add a decision table from scratch

1. Open the *Detail* section of the screen.

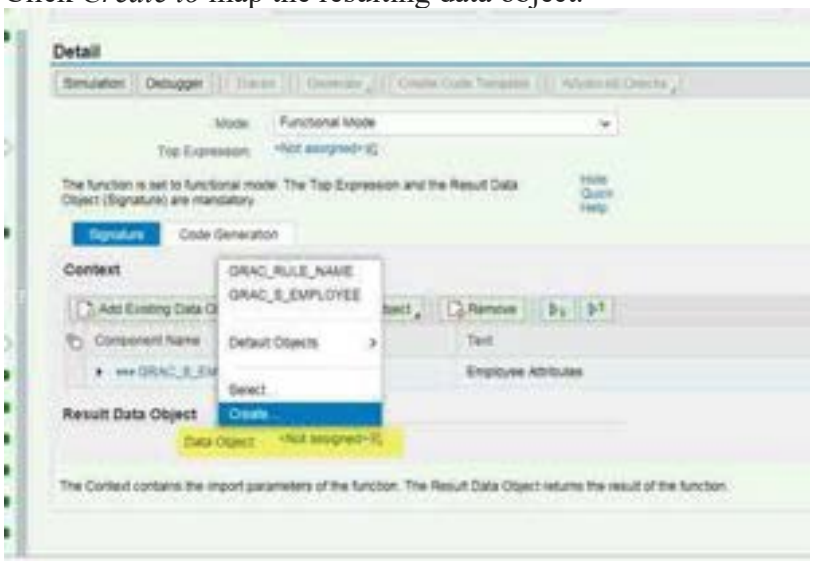


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2. Select the desired employee structure.

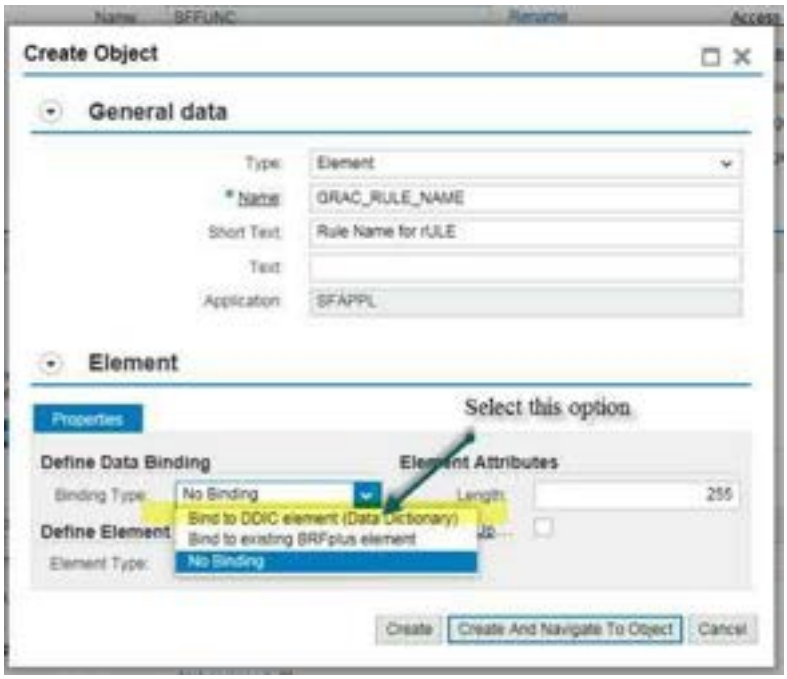


3. Click *Create to* map the resulting data object.



4. Select Bind to DDIC element.

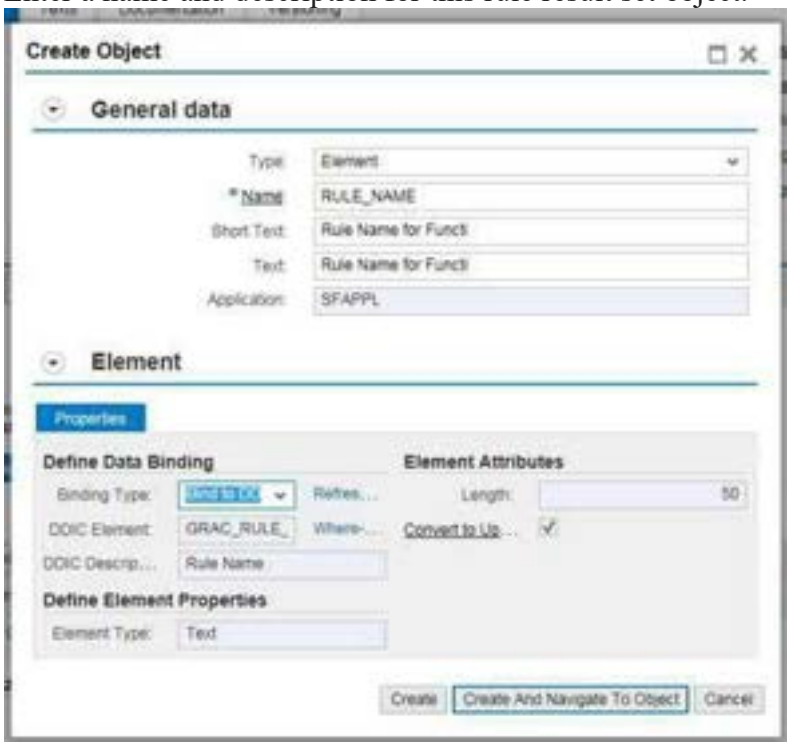
© 2019 SAP SE or an SAP affiliate company. All rights reserved.



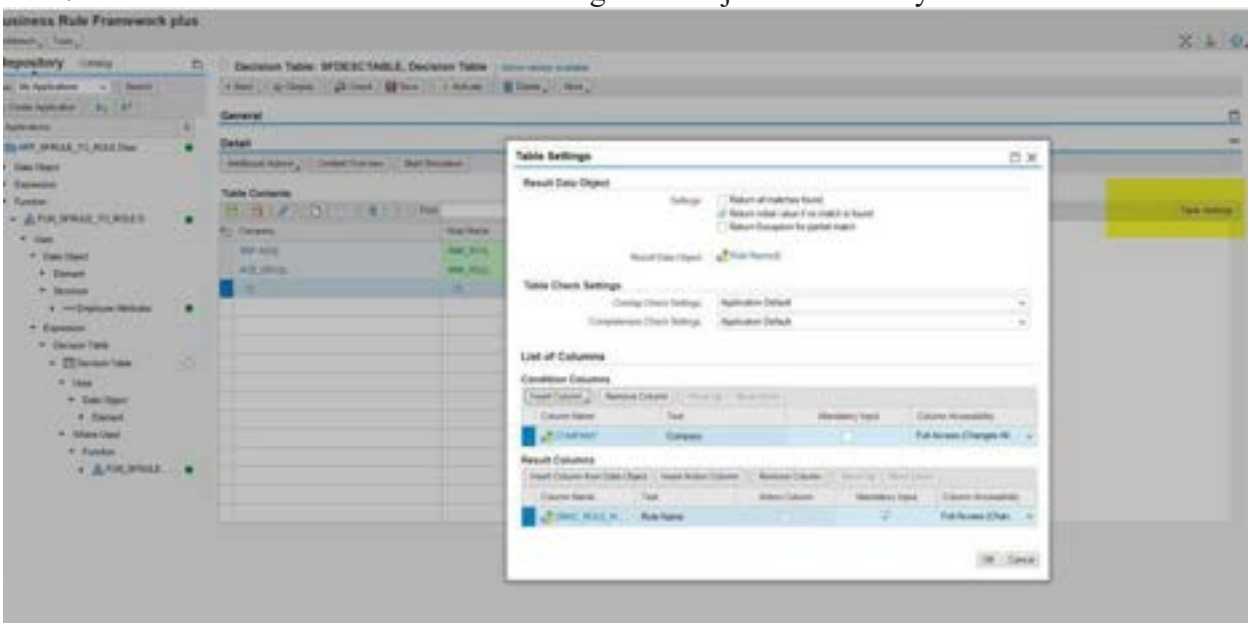
5. Give the DDIC Element a name. Click *OK*.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

6. Enter a name and description for this rule result set object.

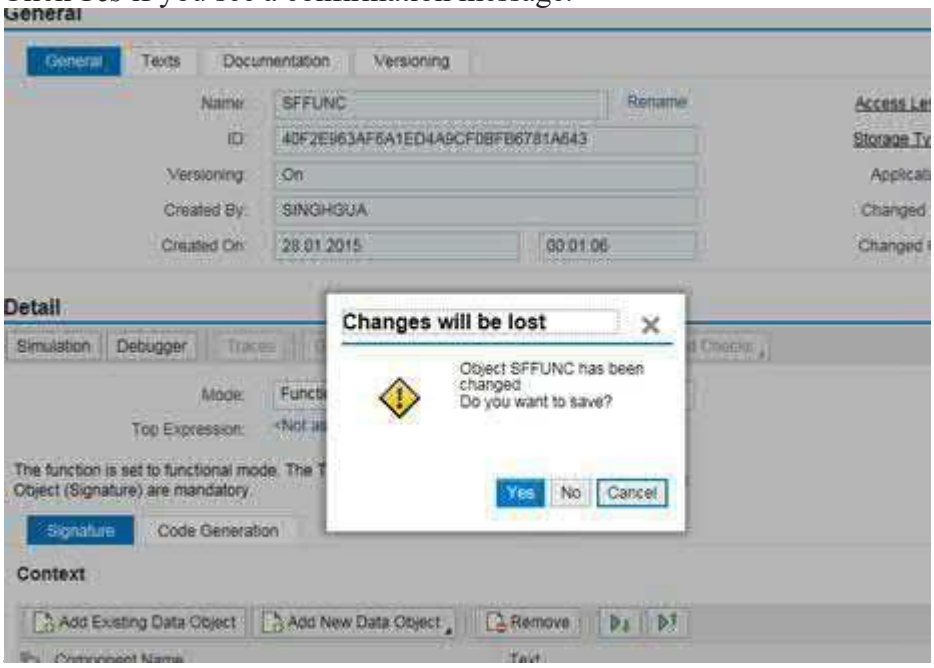


7. Click either Create or Create and Navigate to Object followed by Save and Activate.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

8. Click *Yes* if you see a confirmation message.

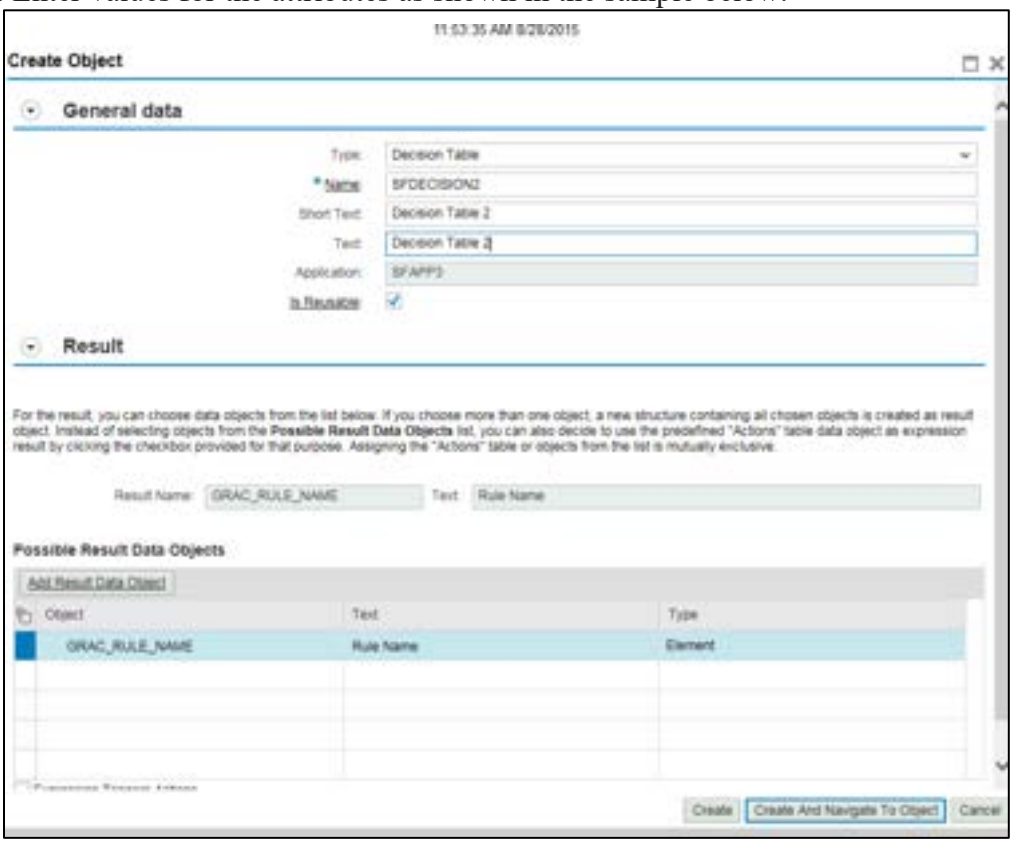


9. To create the decision table expression, in the *Details* section, right click *Top Expression.*

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

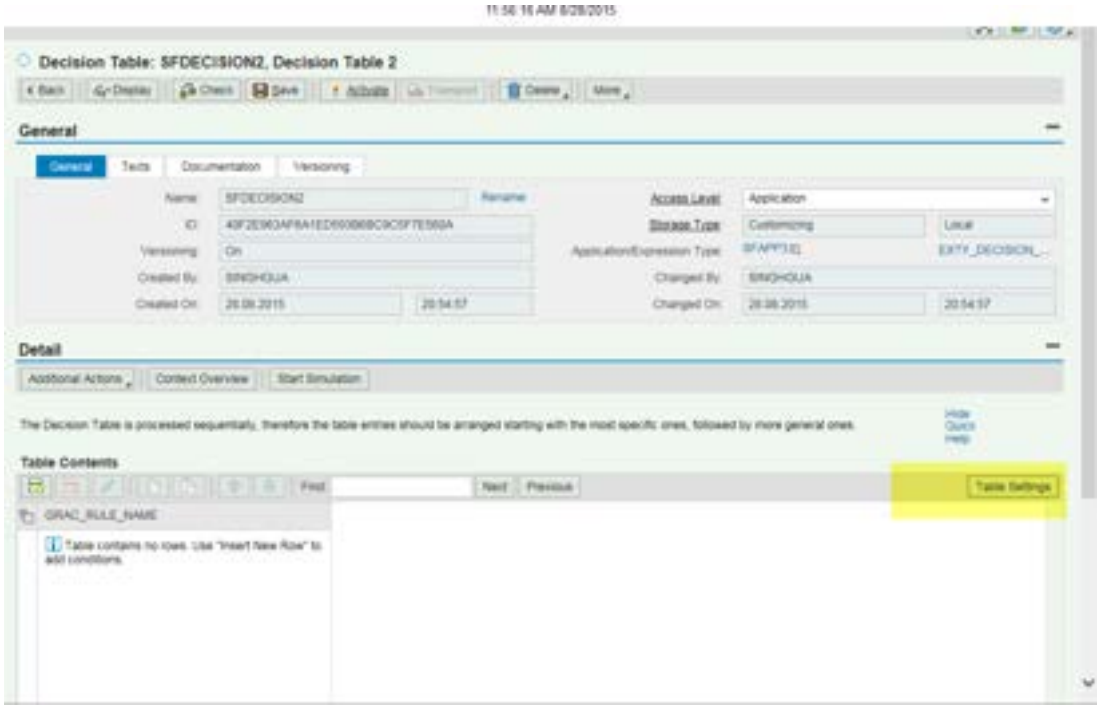
10. In the **Type** field, select *Decision Table*. Then click *Create And Navigate to Object*.

11. Enter values for the attributes as shown in the sample below.



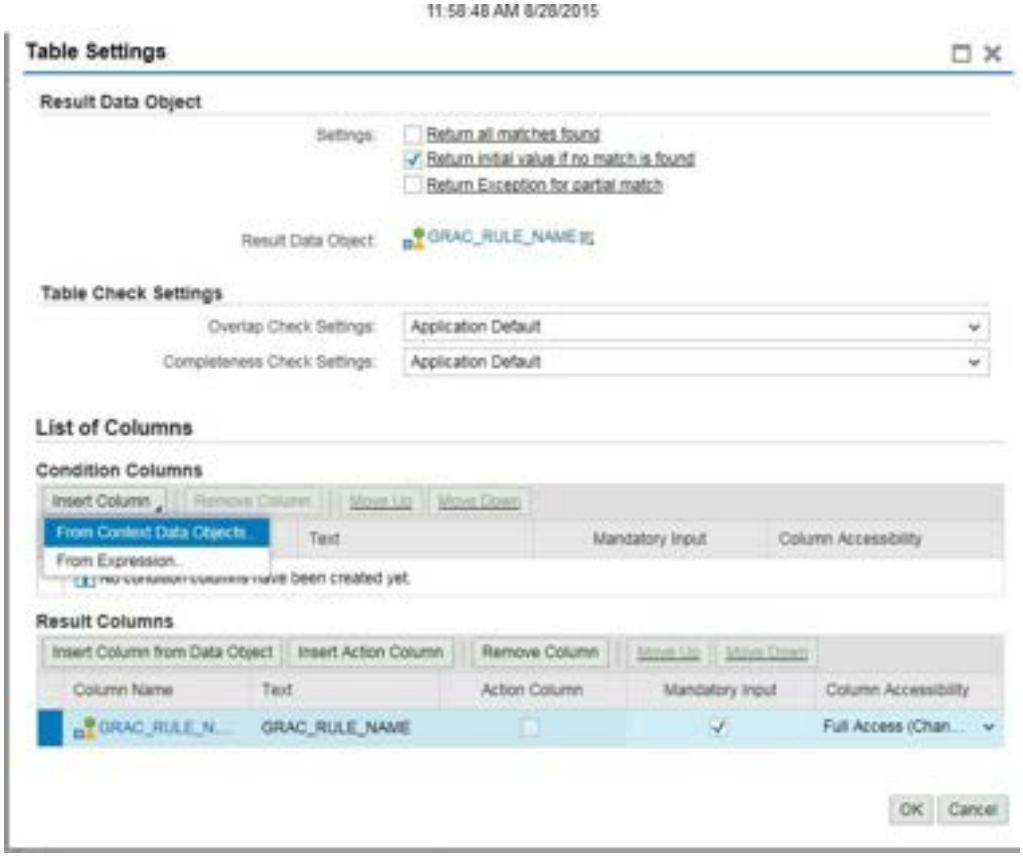
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

12. Click *Create and Navigate to Object*.
    If you do not see the employee structure, add it by clicking *Table Settings.*



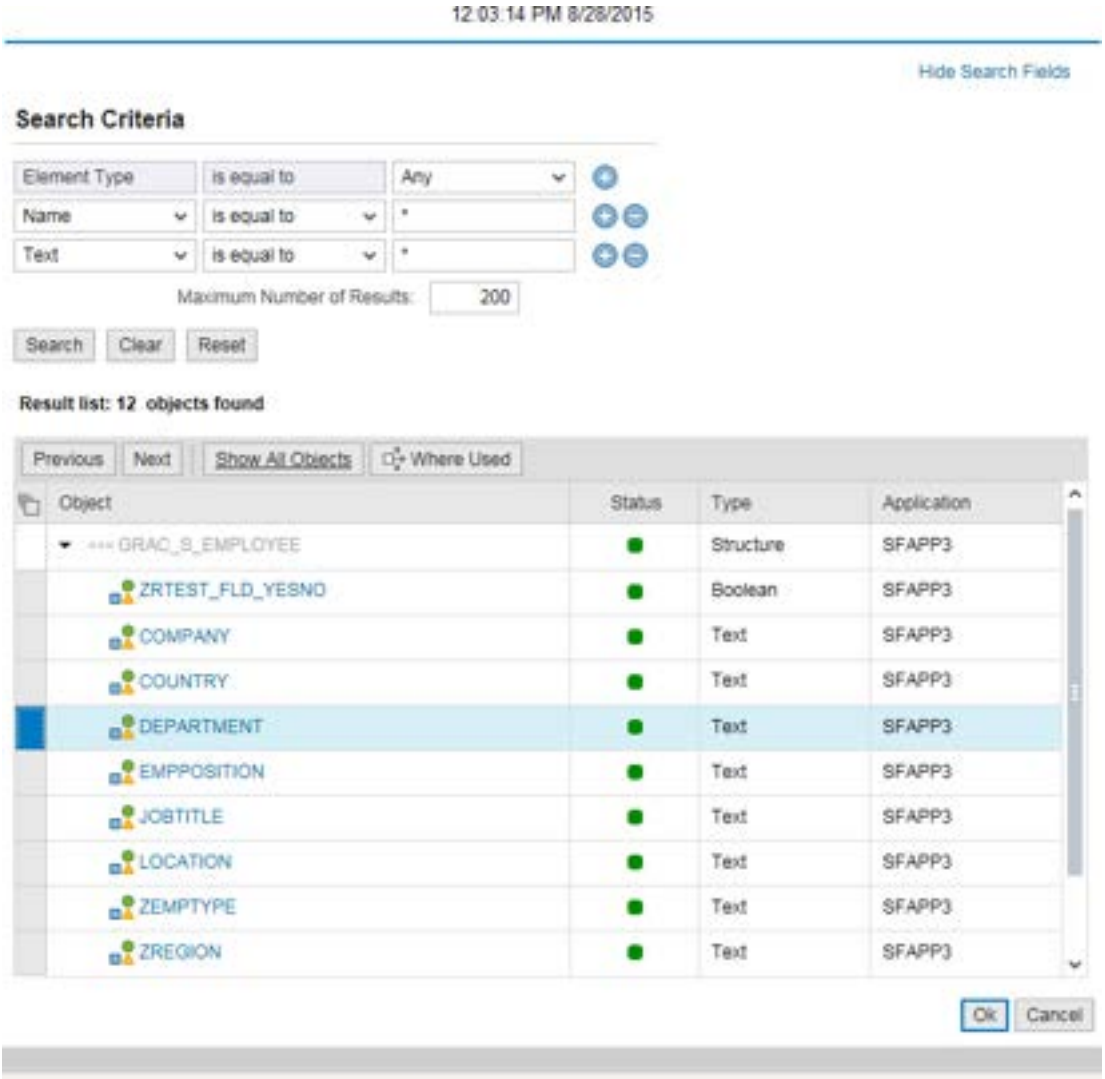
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

13. Click *From Context Data Objects*.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

14. You can select any attribute from the employee structure object on which you want to run your decision table. One sample scenario is DEPARTMENT as shown in the screenshot.

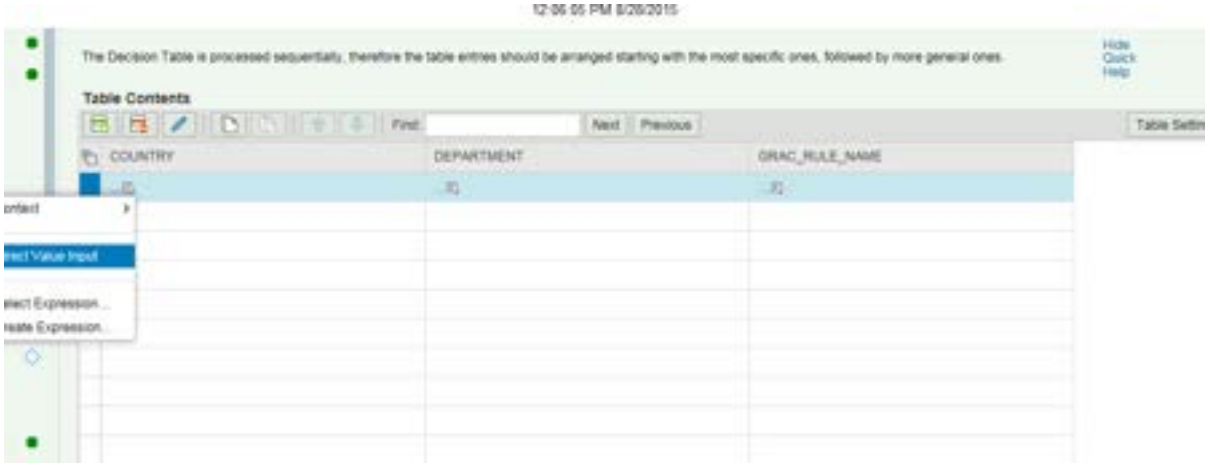


15. Click *OK*.

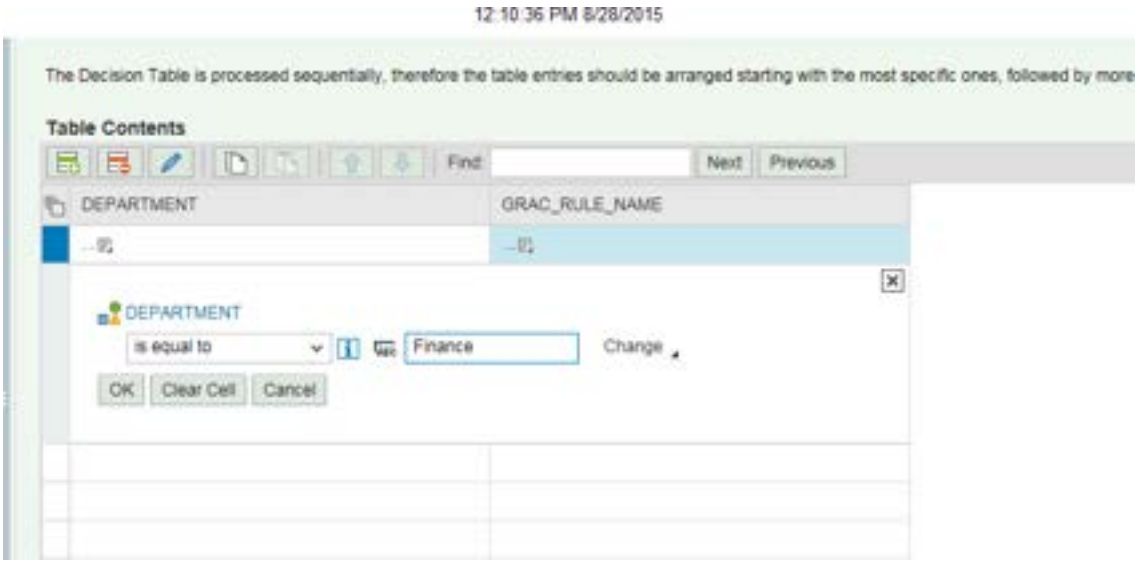
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

16. Click **Table Contents**.

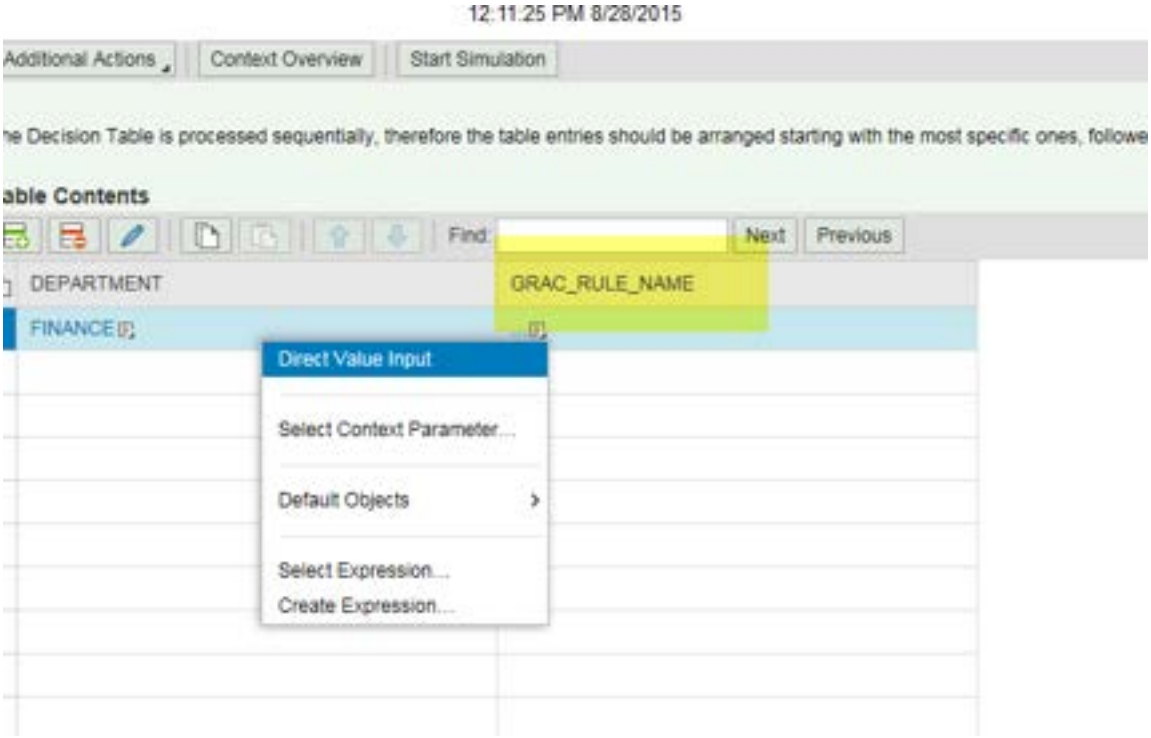
17. The screen displays a condition row. Right-click to assign a value to a condition. You can assign a direct value as shown below.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.



18. Click *OK*.
19. Right click on GRAC_RULE_NAME to enter a specific value.

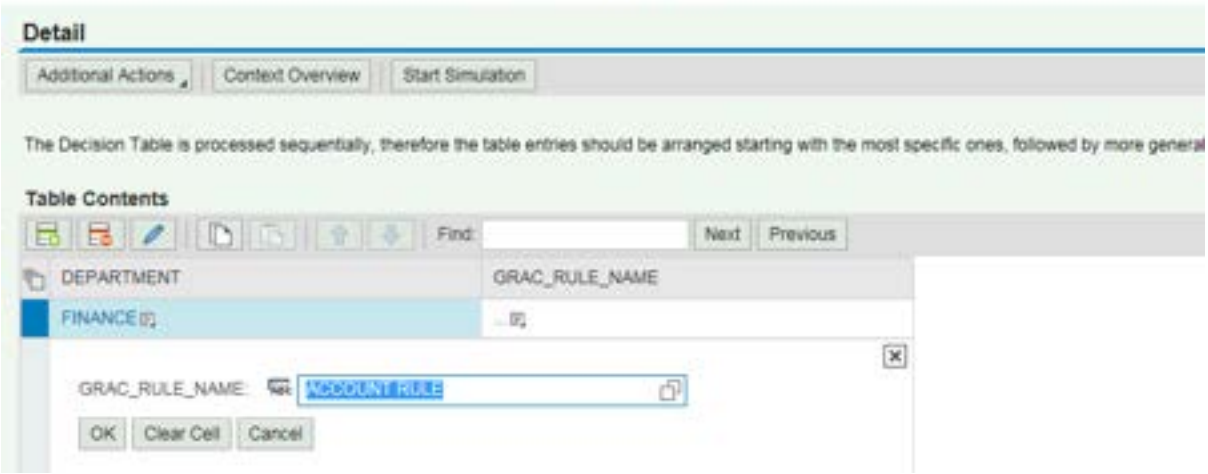


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

12:13:34 PM 8/28/2015

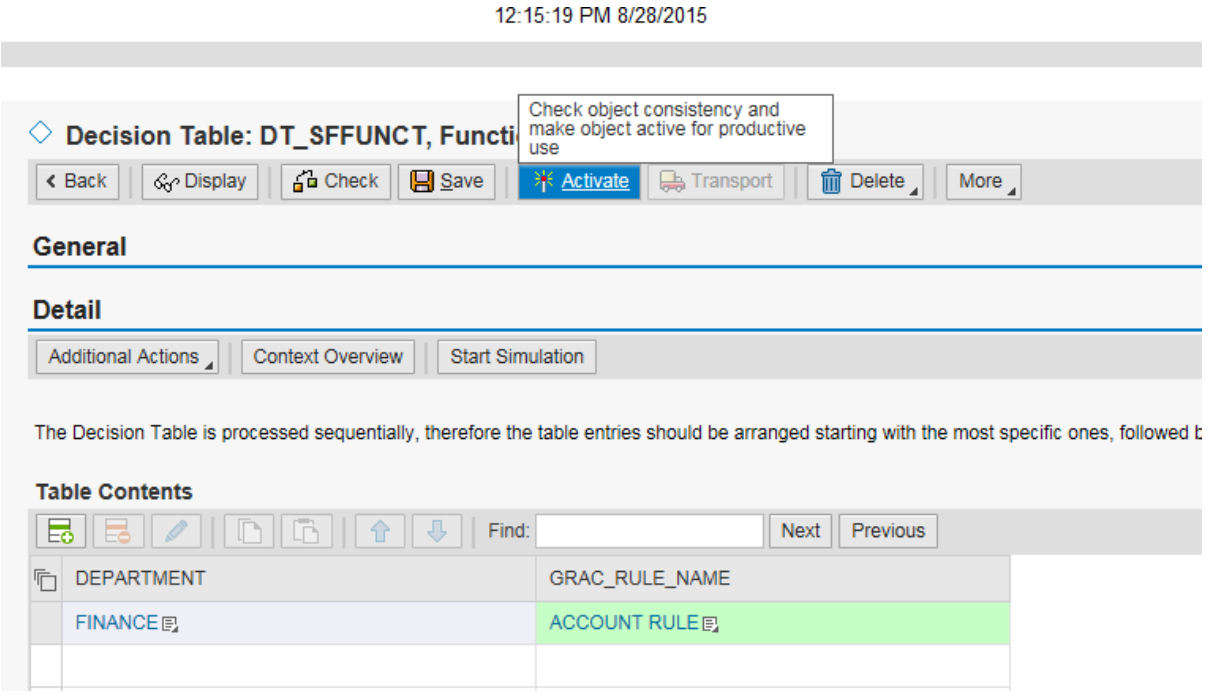
20. Either you can type the name of the rule to be mapped as a Result for this condition in the text box, or you can press the F4 key.

12:14:35 PM 8/28/2015



21. Select or type the rule that you want as a result object. The previous screen displays.
22. Click *OK*. Activate the function.

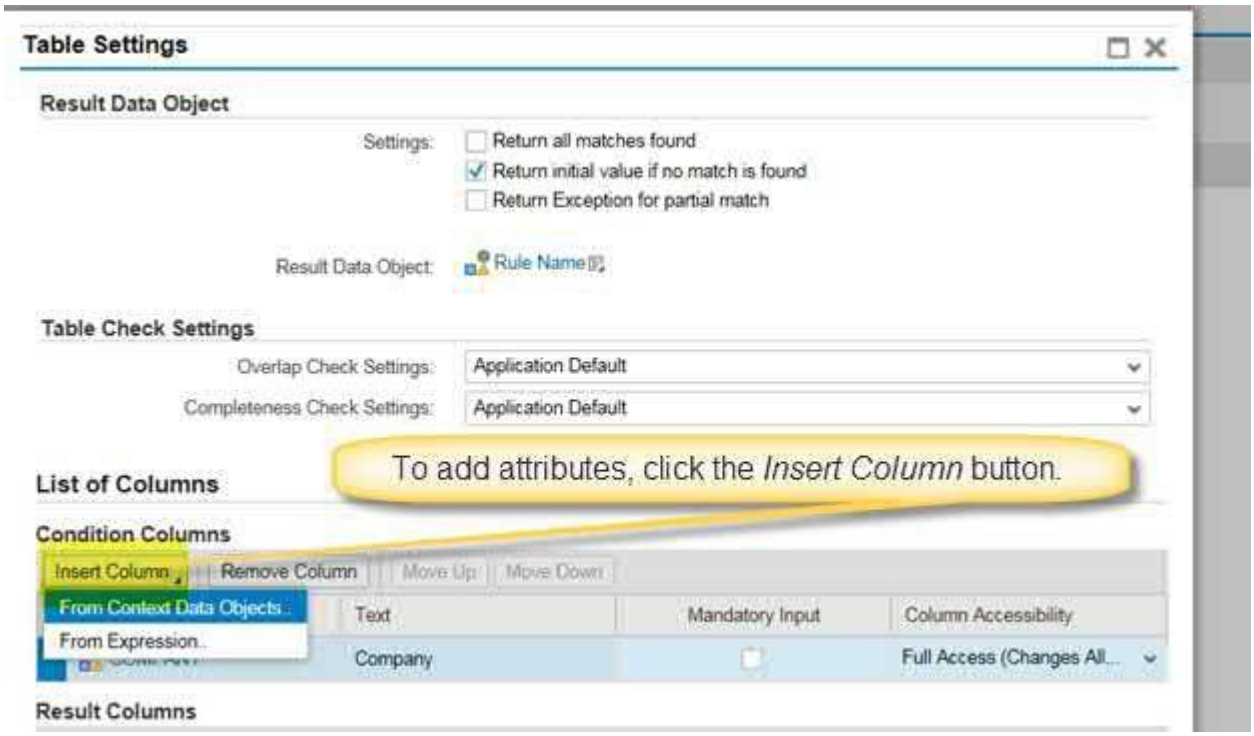
© 2019 SAP SE or an SAP affiliate company. All rights reserved.



23. The decision table is now configured for the following rule:
    For an employee with attribute value of *Finance* for Department, the rule ACCOUNT_RULE will be executed

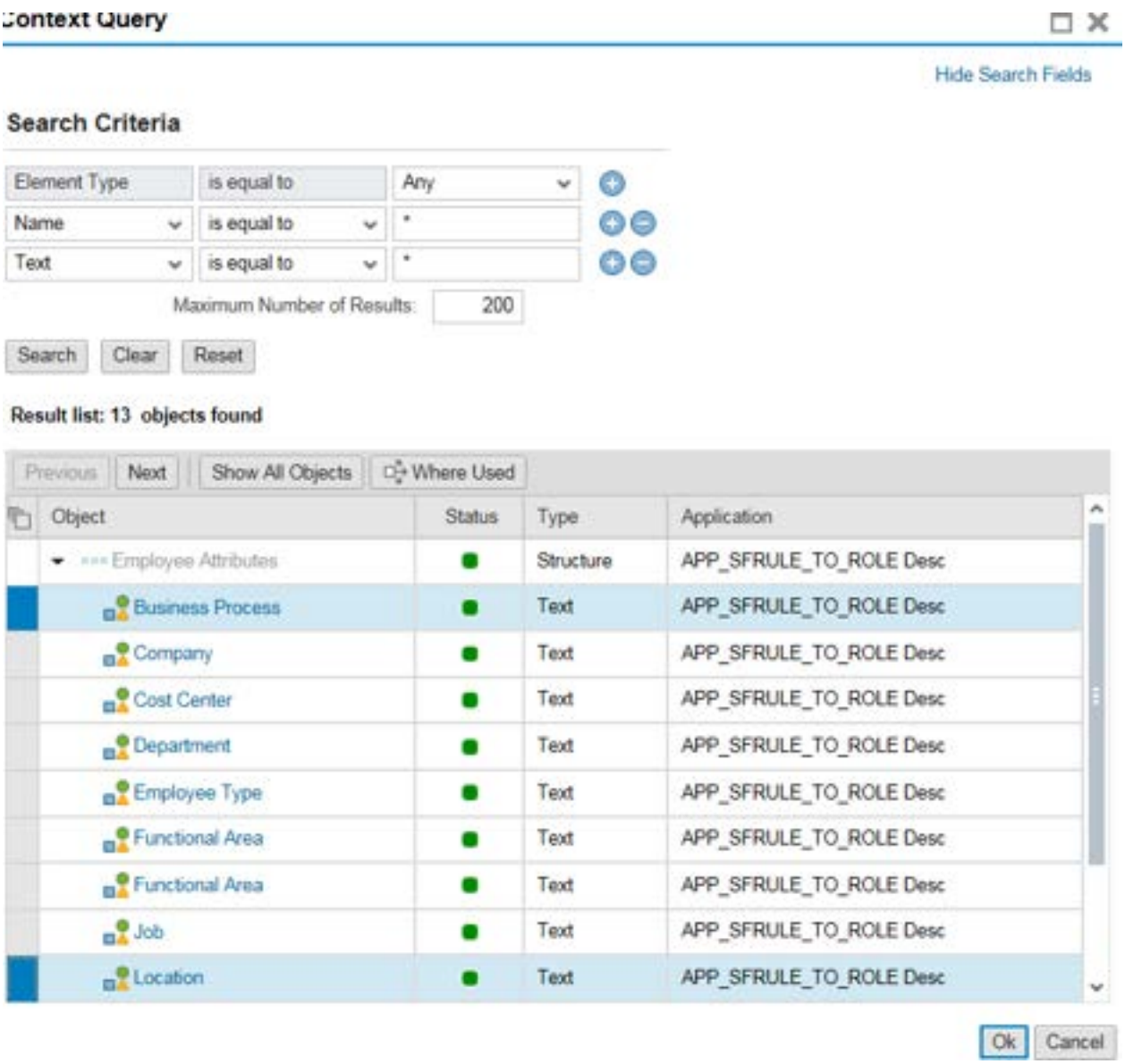
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

24. Click *Table Settings.* The screenshot above shows that *Company* is one of the selected attributes for decision table. You can select more attributes by clicking on the *Insert Column* button.



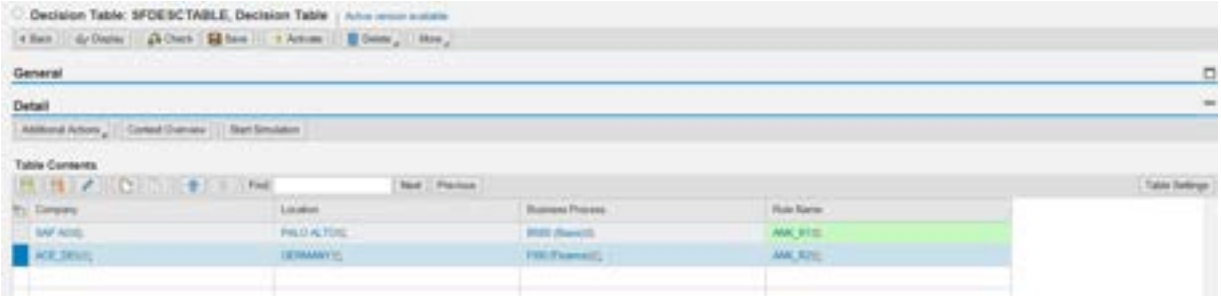
25. You can select more attributes as shown in the sample below.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.



26. Once attributes are selected, you can specify values for them as shown in the example below.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.



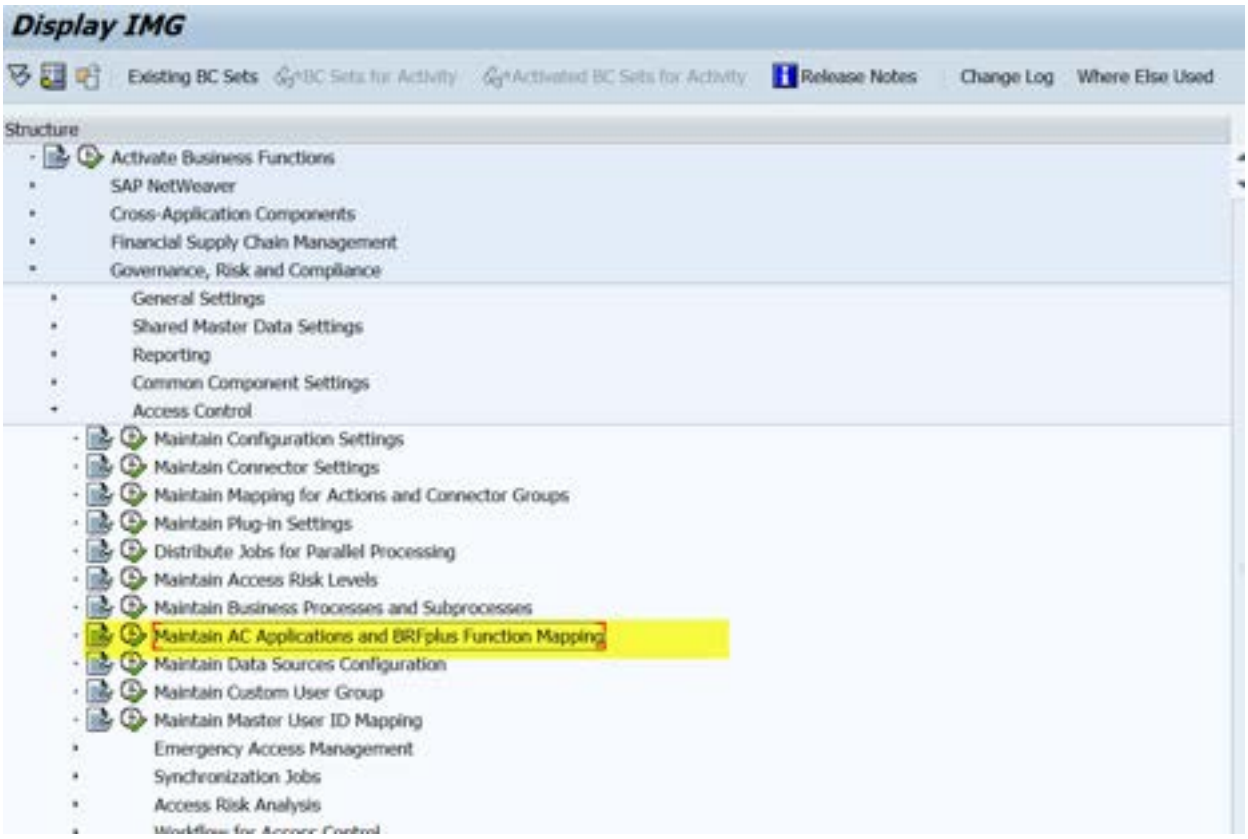
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.12 Mapping BRF+ to SAP Access Control Application IDs

Once you have defined the BRF+ application that determines which roles to assign to employees based on the employee's attributes, you must map the relevant function ID to an SAP Access Control *Application ID.*

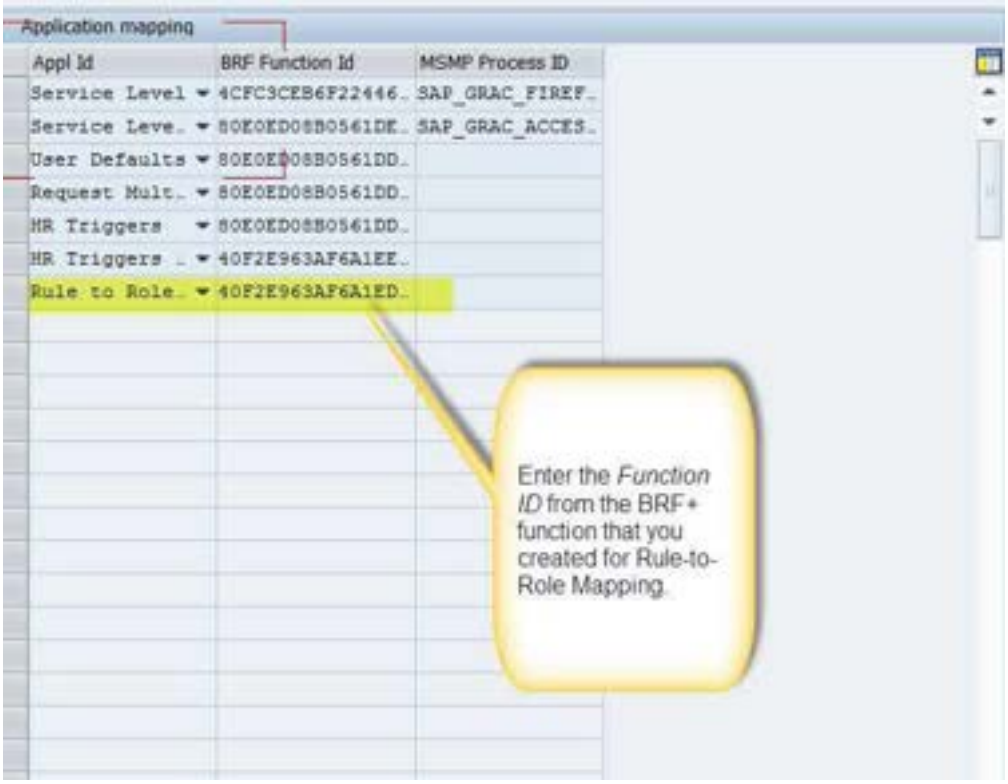
Procedure

1. In the SAP Reference IMG, choose Governance Risk, and Compliance ➔ User provisioning➔ Maintain Access Control Applications and BRF+ Function Mapping



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2. Enter the *Function ID* (you noted the ID in the previous section) for the BRF+ Rule-to-Role Mapping.



3. *Save* your entry.

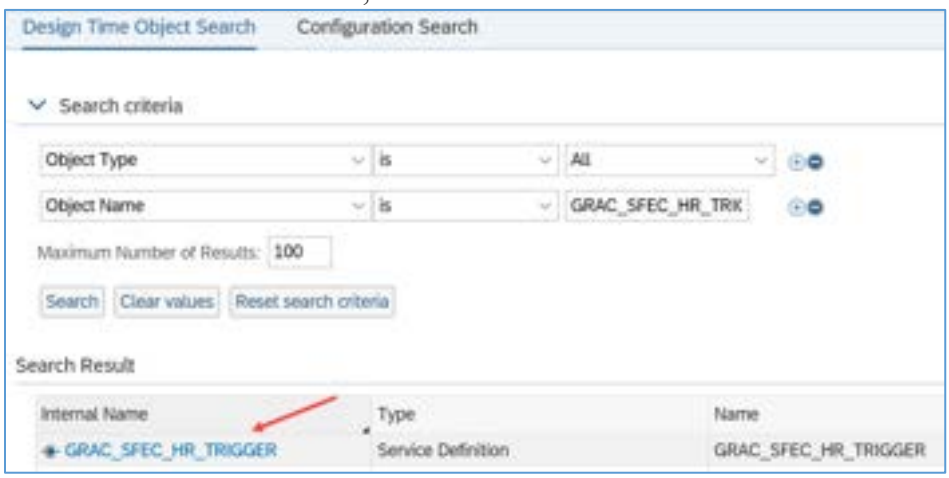
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

4.13 Locating URLs for SAP Cloud Integration

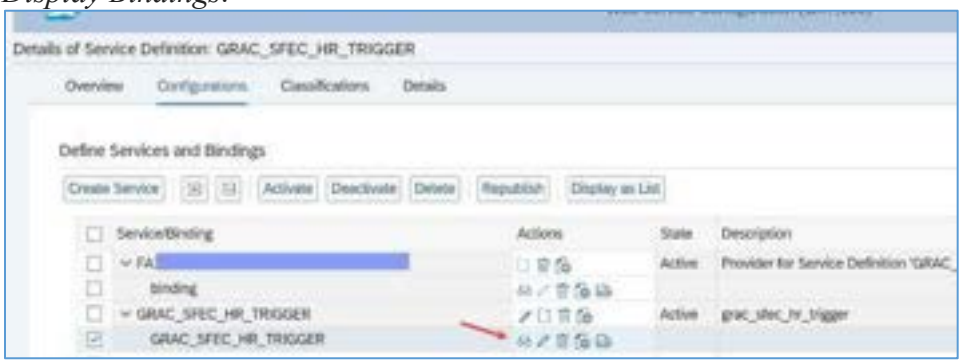
Follow the steps below to find the URLs that you need to set up the SAP Cloud Integration channel adaptors.

Procedure

1. Go to SOA Management by executing transaction *SOAMANAGER*.
2. Click Web Service Configuration.
3. In the Search Criteria fields, enter the Web service name, for example, GRAC_SFEC_HR_TRIGGER, and click *Search*.
4. On the Search Result screen, click the relevant web service.

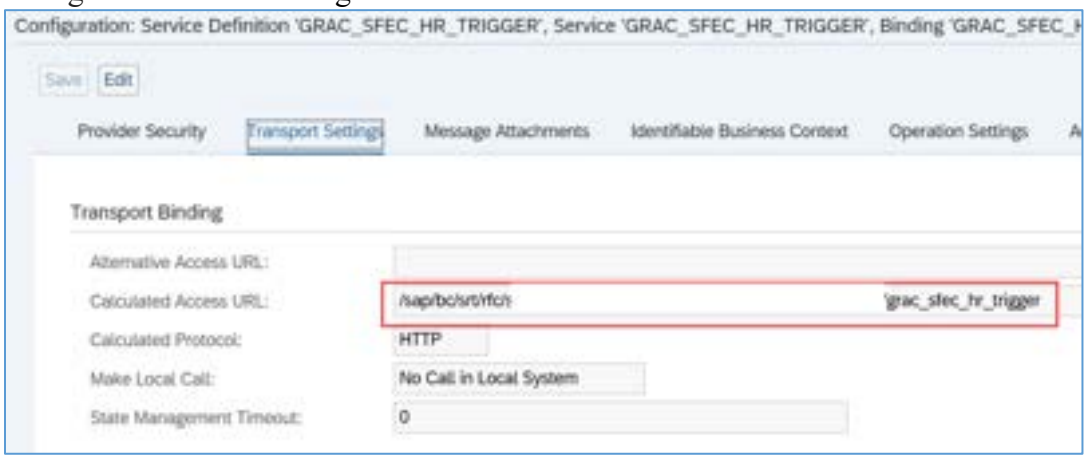


5. On the Configurations screen, select the relevant service, and click the eyeglass icon to *Display Bindings*.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

6. On the **Transport Settings** tab, copy the **Calculated Access URL**. You will use it later to configure SAP Cloud Integration.



Note

These URLs are only accessible internally. To access the URLs externally, copy the first part from the SOAMANAGER browser window, for example, `https://xxx.sap.corp:44322/`. In the WSDL and endpoint URLs displayed in the *Details of Provider Configuration* screen, replace the first part of the URLs with the external part you copied before

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5 Configuring SAP Cloud Integration Process

SAP provides prepackaged, generic integration content called integration flows for the integration of SAP Access Control with SAP SuccessFactors Employee Central.

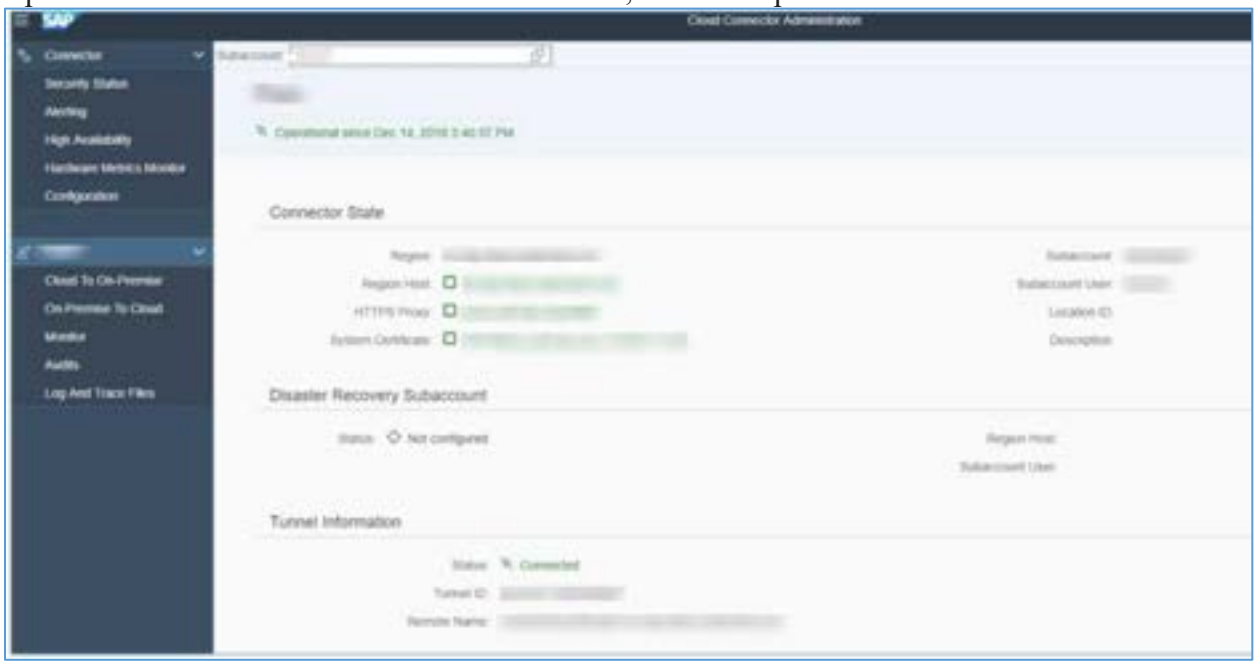
Prerequisites

You have received the SAP Cloud Integration provisioning email and the administrator has created the necessary users in SAP Cloud Integration.

5.1 Configure SAP Cloud Connector Settings

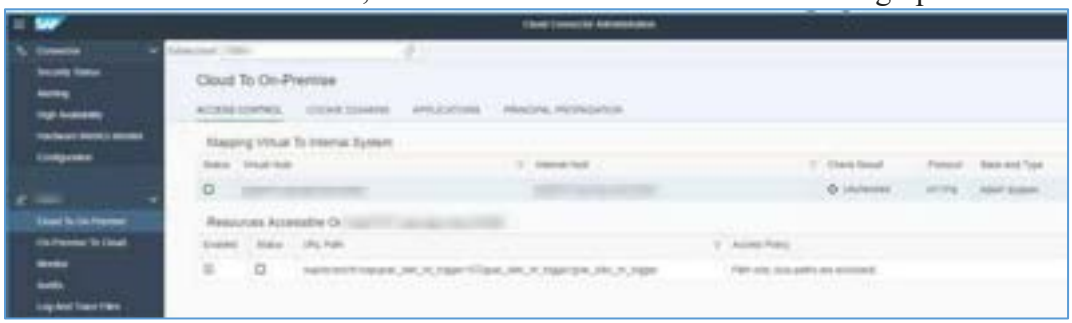
To enable communication between your on-premise access control system and SFEC, you must configure the SAP Cloud Connector on the access control system.

1. Open the SAP Cloud Connector as administrator, and then open subaccount for SFEC.



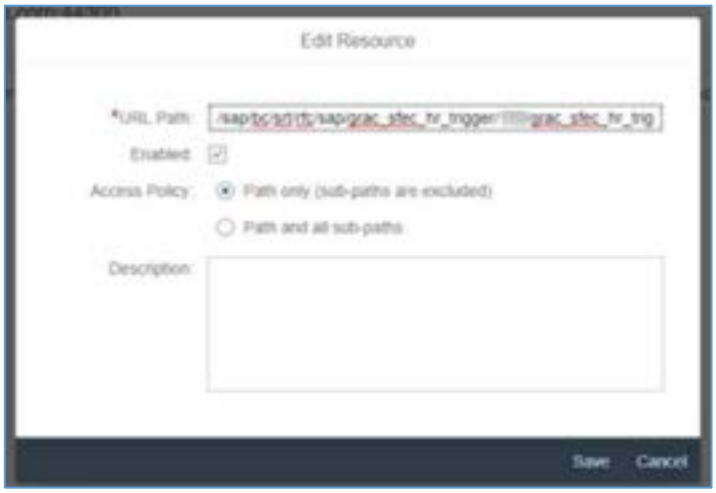
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

2. Click *Cloud To On-Premise*, and add the URL Path as shown in the graphic below.



3. Edit the System Mapping. Enter information for the GRC system.

4. Paste the calculated URL from the SOAMANAGER in the URL Path field.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.2 Configure User Credentials for SFEC and GRC System

After you have configured the SAP Cloud Connector (in previous step), you need to create user credentials for the on-premise GRC system and SFEC in the SAP Cloud Integration.

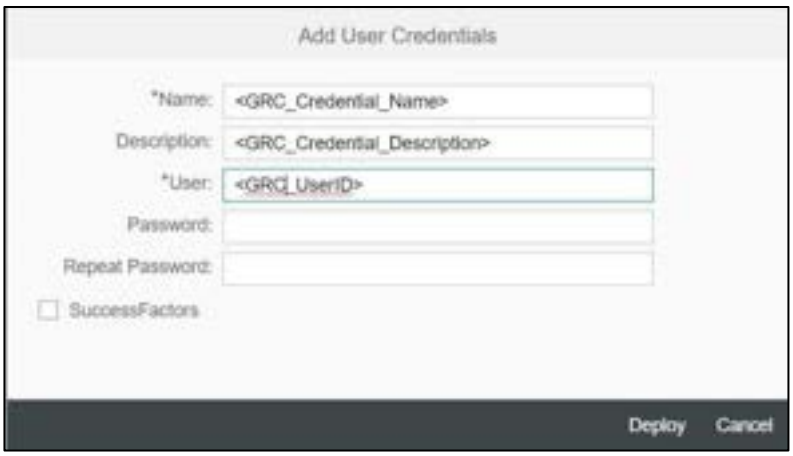
5.2.1 Configure GRC User Credentials

Prerequisites

The communication user is created in SAP Access Control.

Procedure

1. Access the SAP Cloud Integration screen by opening the URL from the provisioning email. It should be in the format: *https//<SAP Cloud Integration CI>*.
2. In the **Monitor** tab, navigate to **Manage Security Material**, and click **Security Material**.
3. Click *Add* ➔ *User Credential* in the top right corner.
4. Enter a meaningful *Name* – this will be referenced in iFlows – a *Description*, and the *User* and *Password.* Do **not** check the *SuccessFactors* check box.



Note

The User Name and Password must be taken from the *communication user* created in SAP Access Control.

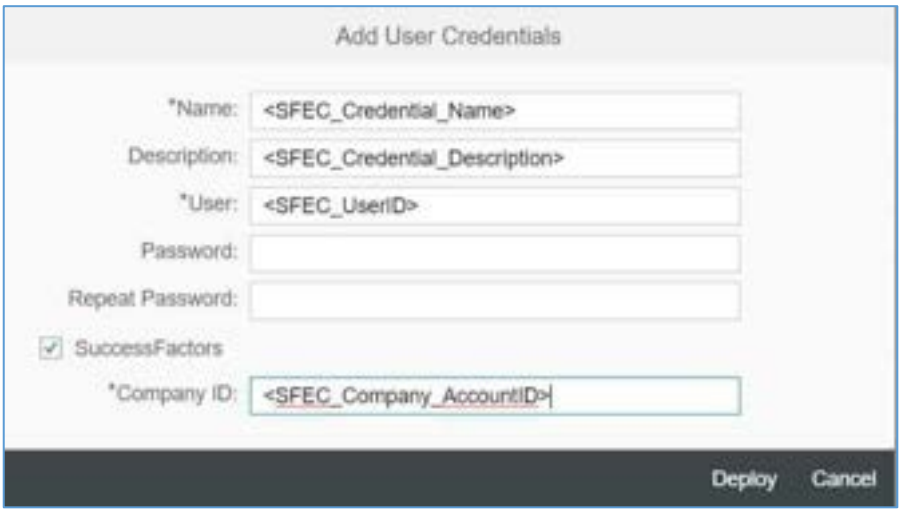
5. Click Deploy.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.2.2 Configure SFEC User Credentials

Procedure

1. Access the SAP Cloud Integration screen by opening the URL from the provisioning email. It should be in the format: *https//<SAP Cloud Integration CI>*.
2. In the **Monitor** tab, navigate to **Manage Security Material**, and click **Security Material**.
3. Click *Add* ➔ *User Credential* in the top right corner.



4. Enter a meaningful *Name* – this will be referenced in iFlows – a *Description*, and the *User* and *Password.* Be sure to check the *SuccessFactors* check box and provide the *Company ID.*
5. Click **Deploy**.

Sample of completed configuration (one for SFEC and one for GRC):

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.3 Configure and Deploy iFlows

To configure and deploy the SAP Access Control integration, you must copy the delivered integration package to your workspace and modify it.

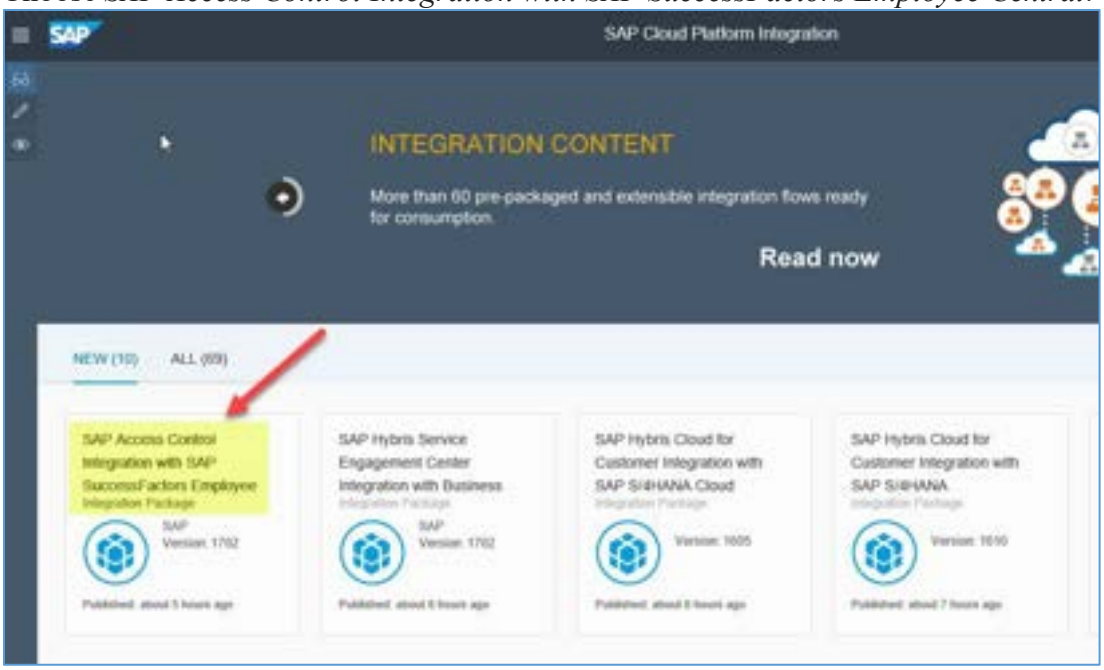
Prerequisites

1. To be able to import and deploy iFlows, you need the *AuthGroup.IntegrationDeveloper* role assigned in your tenant.
2. For certificate-based authentication between SAP Access Control and SAP Cloud Integration, you need the client certificate from SAP Access Control. For more information, see the section *How to get the SAP Cloud Integration Client Certificate.*

Process

1. On SAP Cloud Integration, choose the *Discover* icon.

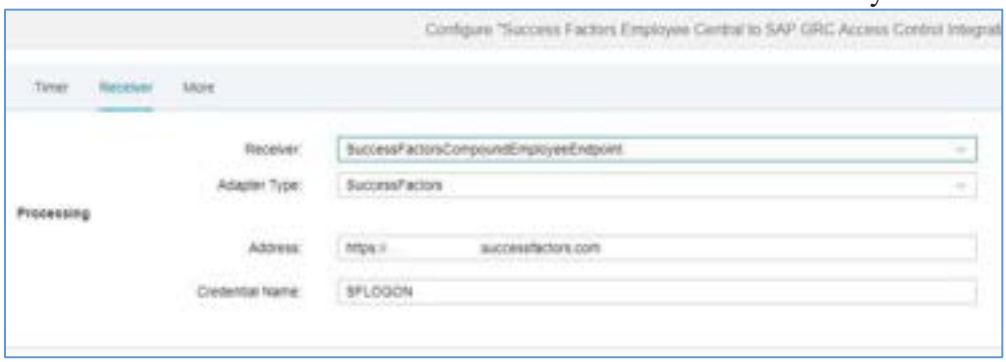
2. Choose *SAP Access Control Integration with SAP SuccessFactors Employee Central*.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

3. In the **Discover** tab, hover over the integration flow (*SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization*) to display the tooltip, and click *Copy to Workspace*.
4. In the *Artifacts* tab, select the desired iFlow package, click the *Actions* icon,and select *Configure.*

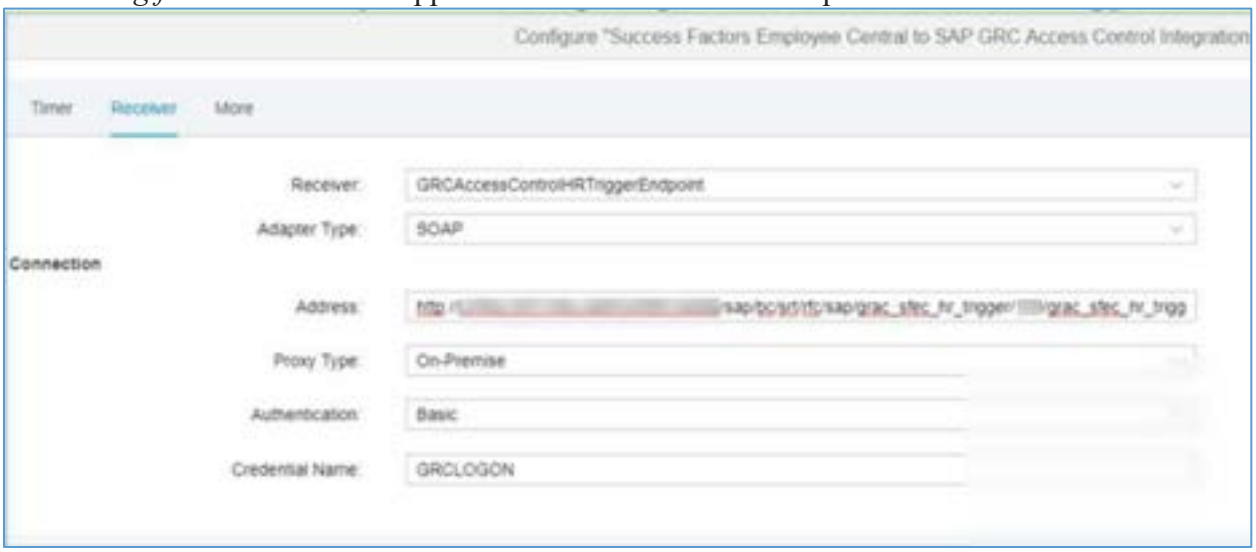
5. Create a receiver for SFEC:
   a. On the *Receiver* tab, select the SAP SuccessFactors receiver from the dropdown.
   b. Enter the address and credential name for the SAP SuccessFactors system.



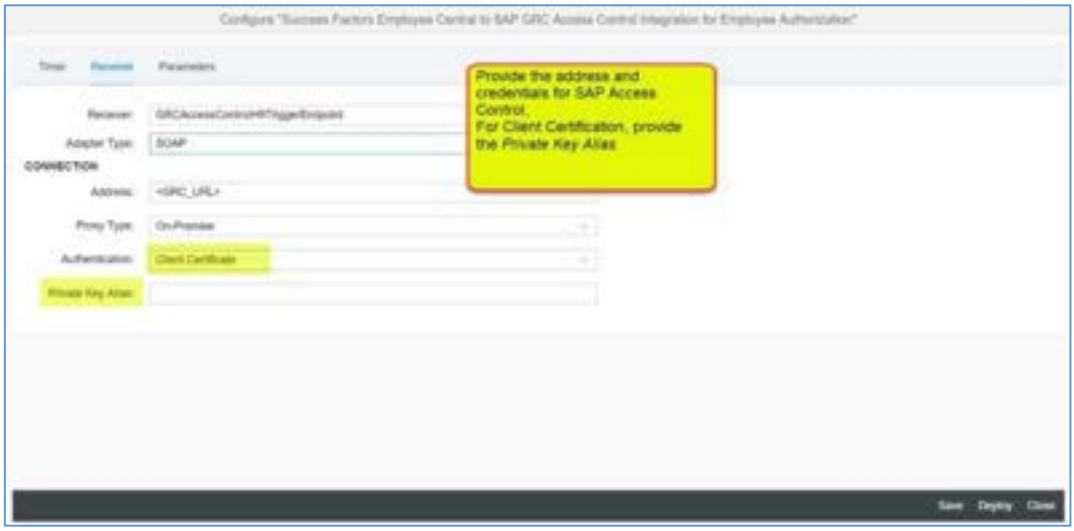
   c. Allow the authentication type to default to *Basic Authentication*.
   d. Click *Save* and then click *Deploy*.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

6. Create a Receiver for SAP Access Control:
   a. On the *Receiver tab,* select the SAP Access Control receiver from the dropdown.
   b. Provide the address and credential name for the SAP Access Control receiver.
   The URL is built based on the *web-service calculated URL* you created in *Create a Binding for Web Services*. Append it with the hostname and port.



   c. Choose authentication type as *Basic* or *Client Certificate*.
      - If it is *Basic* authentication, provide the credential name.
      - If it is *Client Certification*, provide the *Private Key Alias*.
      For more information, see the section *How to get the SAP Cloud Integration Client Certificate.*



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

7. Configure the execution parameters for the initial data load and for subsequent recurring integration runs.

Initial Data Load Configuration

1. Choose the *Parameters* tab.
2. For the initial load, the first time you run the integration, provide the *ExecutionFromDate.* The system selects Employee Central records that were created or modified from this date forward.
3. *FutureNoOfDays*: The parameter controls how far into the future new hires can be processed. Enter the number of days beyond the today's date to consider for validity of employee records.

Example

The *FutureNoOfDays* is 20.

New Hire 1 has a start date of today (7/30/2016)
New Hire 2 has a start date of August 10 (8/10/2016)
New Hire 3 has a start date of September 15 (9/15/2016)

SAP Cloud Integration will process new hires that fall within the range of today's date + 20 days. Employees with start dates on or before August 19 (July 30 +20 days) will be processed. Employees with start dates after August 19 will not be processed. In our example, New Hires 1 and 2 will be processed. New Hire 3 will not be processed.

4. Choose the *Timer* tab to schedule the initial load job.
5. Give the *Timer* (job) a descriptive name such as "InitialSFdataload"
6. Check *Run Once* for the initial data load.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

7. Click *Save*.
   When you are ready to execute the initial load, click *Deploy*.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Recurring Integration Configuration

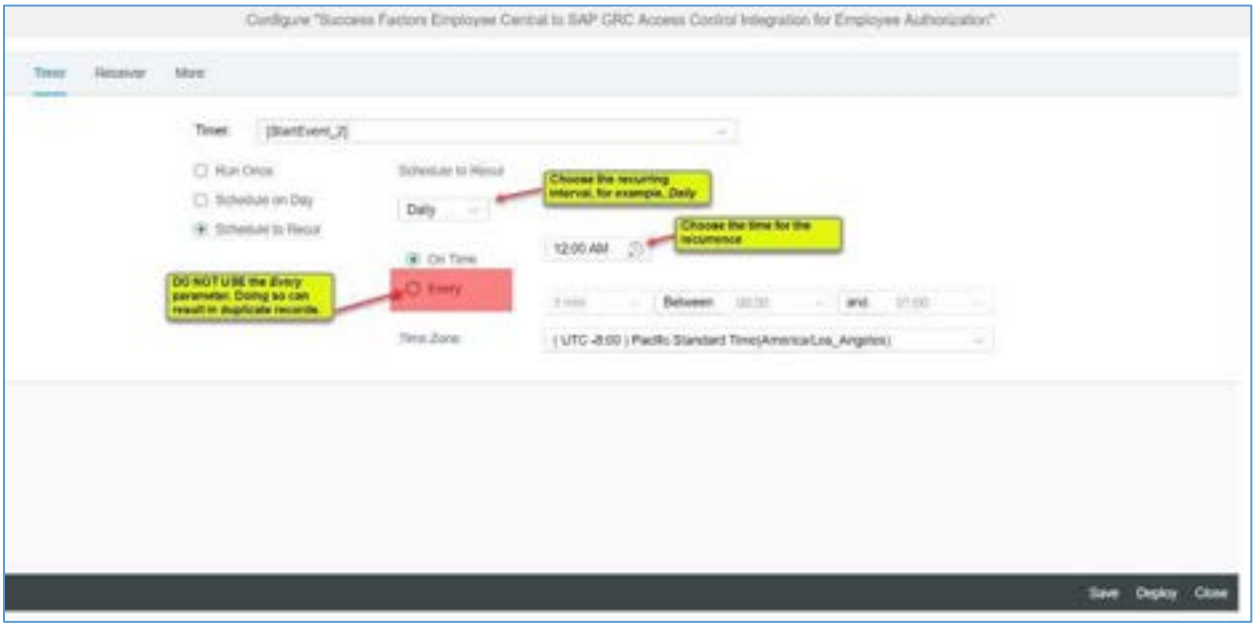
To set up a recurring job:

1. Choose the *Parameters* tab.
2. Leave the *ExecutionFromDate* empty.
3. *FutureNoOfDays*: Enter the number of days beyond the current run date for which you want to include records
4. Click *Save.*
5. Choose the *Timer* tab to schedule the recurring job, and select a timer from the dropdown menu.
6. Click **Schedule to Recur**.
7. Select the recurring interval, for example, *Daily* or *weekly.*
8. Select the *On Time* radio button to fill in the time for your recurring data transfer.

   Warning

   Do not select *Every* radio button! A recurring job should not be scheduled to run more than once in the same day. Doing so can result in duplicate records.

9. Click *Save*.
   When you are ready to execute the job series, click *Deploy.*



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.3.1 Configure and Deploy iFlow - SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData

To configure and deploy the SAP Access Control integration, you must copy the delivered integration package to your workspace and modify it.

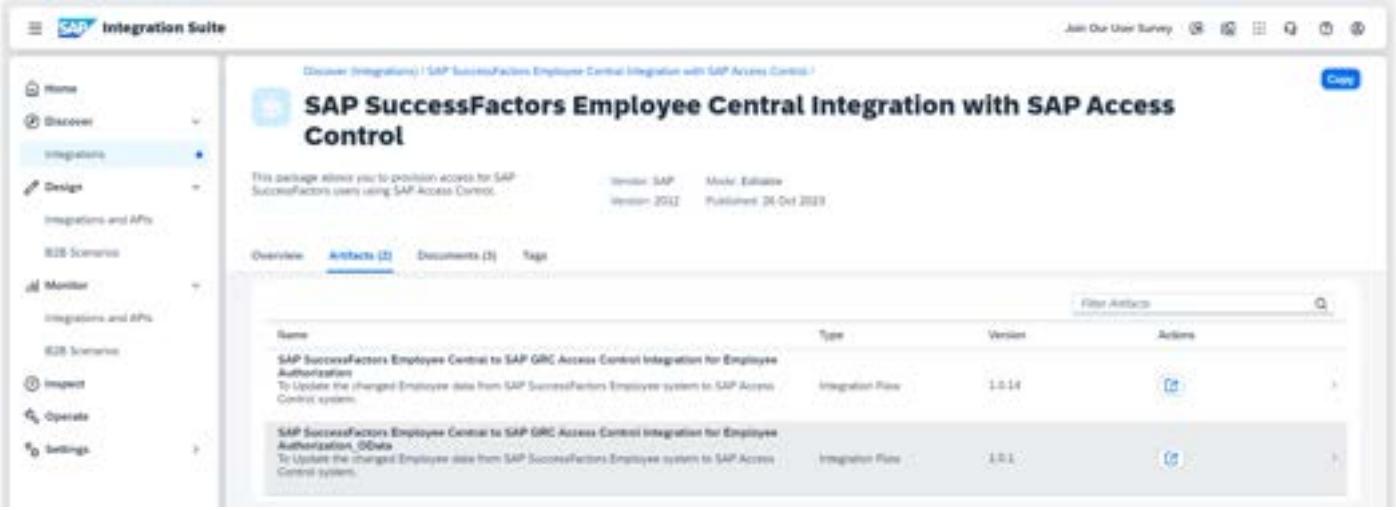
Prerequisites

1. *SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData* Iflow is valid for **GRC 12.0 SP23 and above.**
2. Requirement: Huge data (>5000 records) is fetched from SFEC on daily basis.

Process

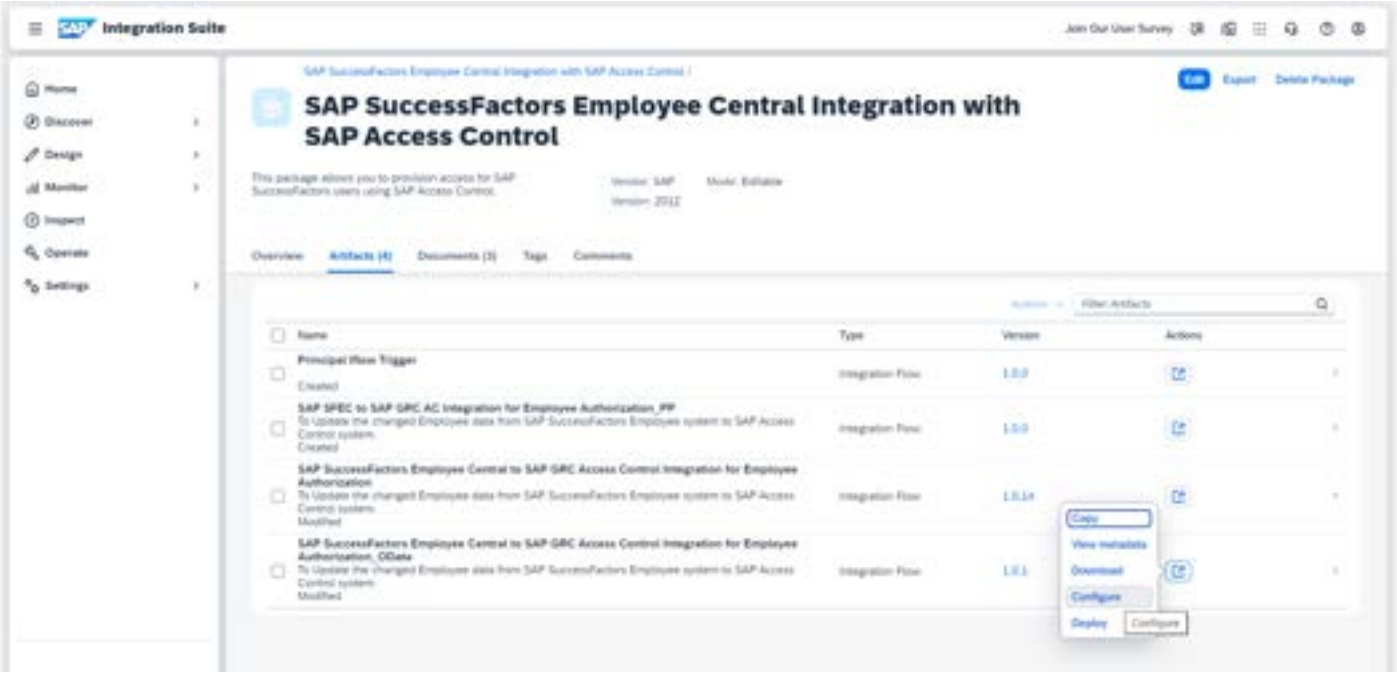
1. On SAP Cloud Integration, choose the *Discover* icon. Choose *SAP Access Control Integration with SAP SuccessFactors Employee Central*

2. In the **Discover** tab, select the integration flow (*SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData*) and click *Copy to Workspace*.



3. In the *Artifacts* tab, select the iFlow package, click the *Actions* icon, and select *Configure*.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.



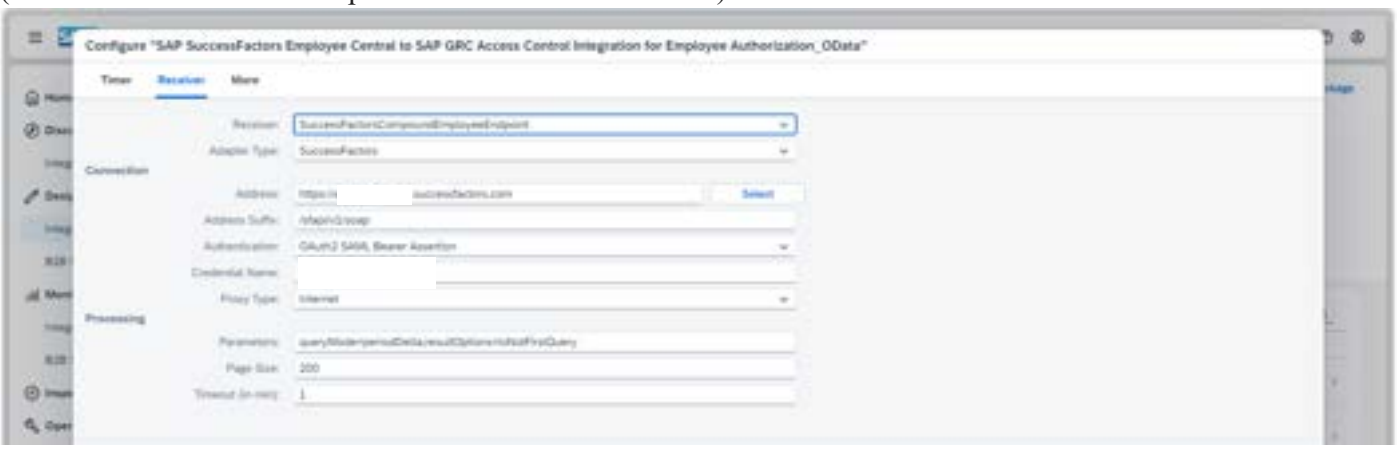
4. Create a receiver for SFEC:

a. On the *Receiver* tab, select the SAP SuccessFactors receiver from the dropdown.

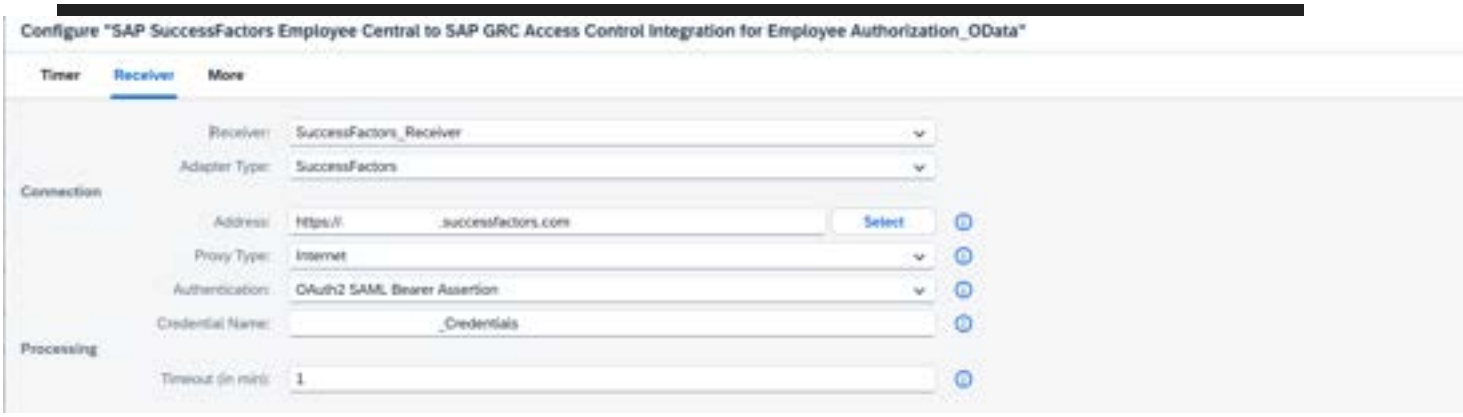
b. Enter the address and credential name for the SAP SuccessFactors system.

c. Allow the authentication type to *Basic Authentication/ OAuth Authentication*.

(For OAuth Authentication please check section - 5.3.1.1)



© 2017 SAP SE or an SAP affiliate company. All rights reserved.



5. Create a Receiver for SAP Access Control:

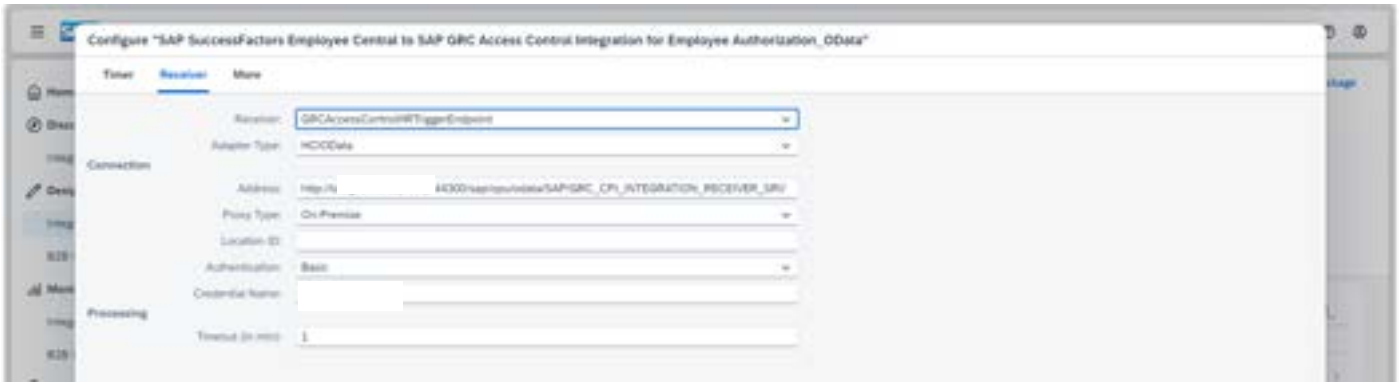
a. On the *Receiver tab,* select the SAP Access Control receiver from the dropdown.

b. Provide address as the <host>:<port>/sap/opu/odata/SAP/GRC_CPI_INTEGRATION_RECEIVER_SRV.

c. Provide Proxy-Type as On-Premise and Location ID as location maintained in cloud connector

d. Provide Authentication as Basic Authentication.

e. Click on Save.



6. Configure the execution parameters for the initial data load and for subsequent recurring integration runs.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Initial Data Load Configuration

1. Choose the *Parameters* tab.
2. For the initial load, the first time you run the integration, provide the *ExecutionFromDate.* The system selects Employee Central records that were created or modified from this date forward.
3. *FutureNoOfDays*: The parameter controls how far into the future new hires can be processed. Enter the number of days beyond the today's date to consider for validity of employee records.

Example

The FutureNoOfDays is 20.
New Hire 1 has a start date of today (7/30/2016)
New Hire 2 has a start date of August 10 (8/10/2016)
New Hire 3 has a start date of September 15 (9/15/2016)
SAP Cloud Integration will process new hires that fall within the range of today's date + 20 days. Employees with start dates on or before August 19 (July 30 +20 days) will be processed. Employees with start dates after August 19 will not be processed. In our example, New Hires 1 and 2 will be processed. New Hire 3 will not be processed.

4. Choose the *Timer* tab to schedule the initial load job.
5. Give the *Timer* (job) a descriptive name such as "InitialSFdataload"
6. Check *Run Once* for the initial data load.
7. Click *Save*.

When you are ready to execute the initial load, click *Deploy.*

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Recurring Integration Configuration

To set up a recurring job:

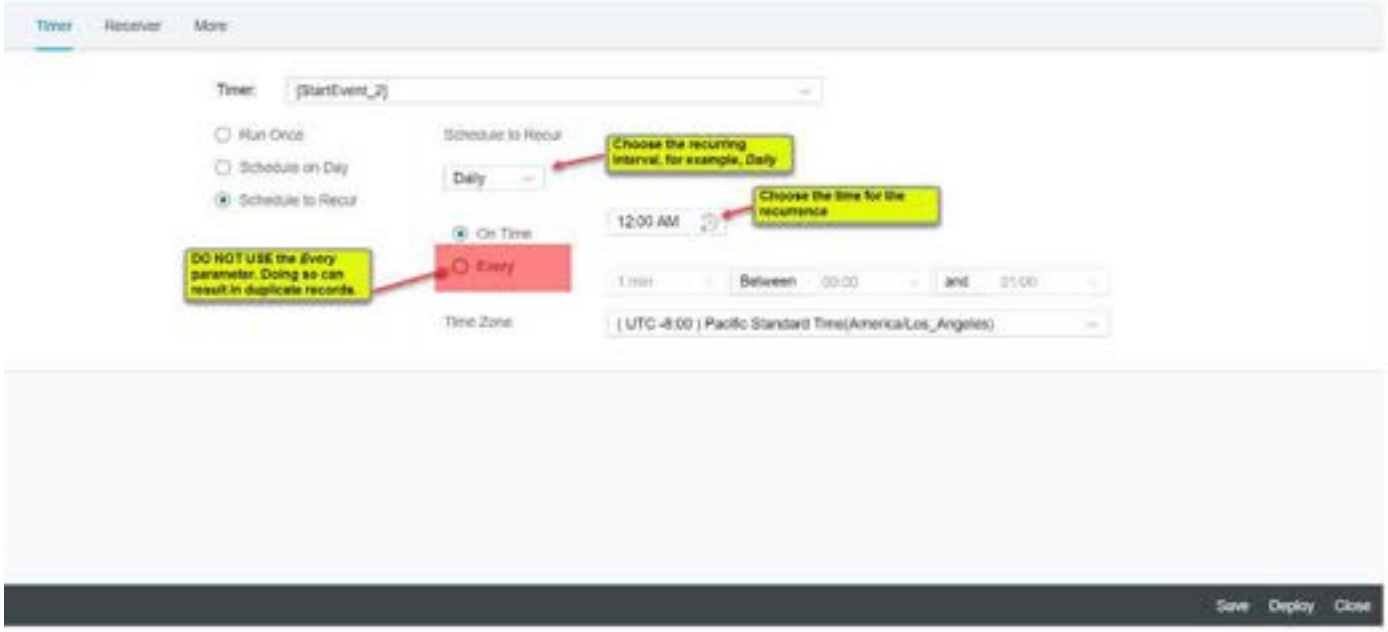
1. Choose the *Parameters* tab.
2. Leave the *ExecutionFromDate* empty.
3. *FutureNoOfDays*: Enter the number of days beyond the current run date for which you want to include records
4. Click *Save.*
5. Choose the *Timer* tab to schedule the recurring job, and select a timer from the dropdown menu.
6. Click **Schedule to Recur**.
7. Select the recurring interval, for example, *Daily* or *weekly.*
8. Select the *On Time* radio button to fill in the time for your recurring data transfer.

Warning

Do not select Every radio button! A recurring job should not be scheduled to run more than once in the same day. Doing so can result in duplicate records.

9. Click *Save*.

When you are ready to execute the job series, click *Deploy.*



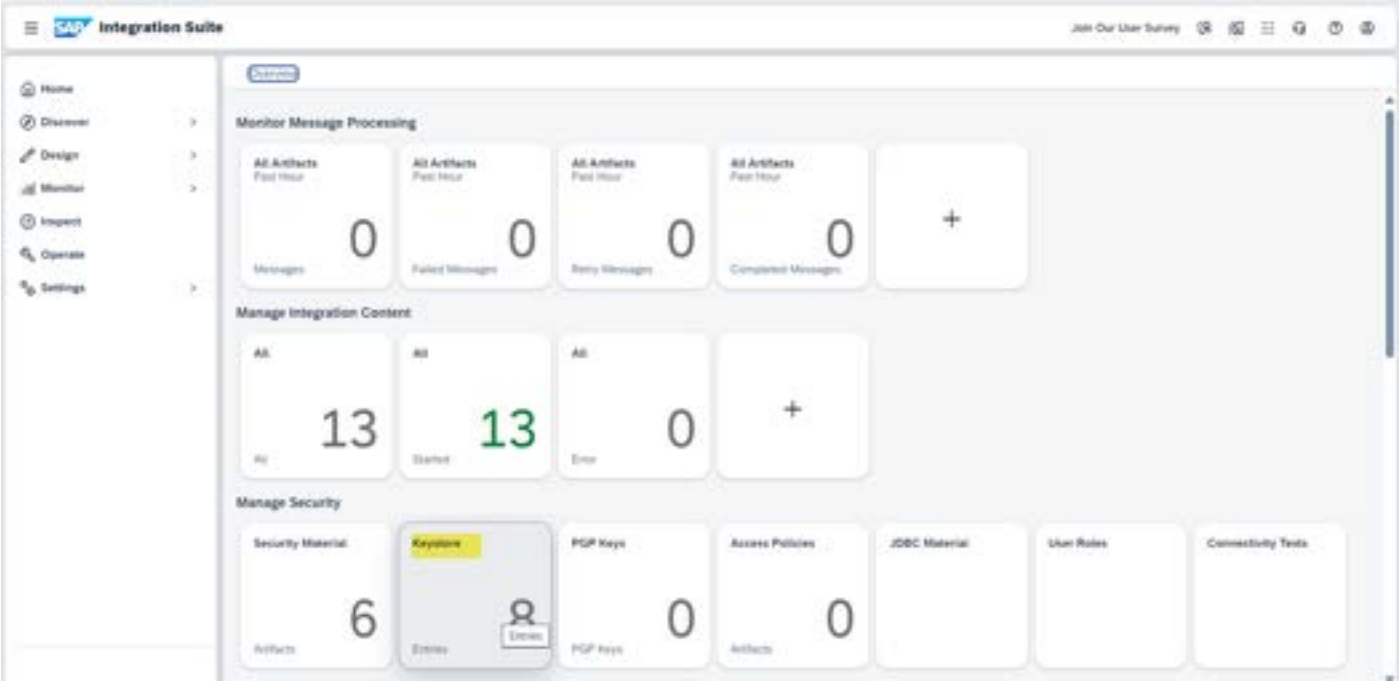
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.3.1.1 How to get the SFEC OAuth2 SAML Bearer Assertion

Follow below steps in CPI and SFEC instance to register the client application and get the OAuth2 SAML Bearer Assertion:

Step 1: Creating a Key Pair in SAP Cloud Integration

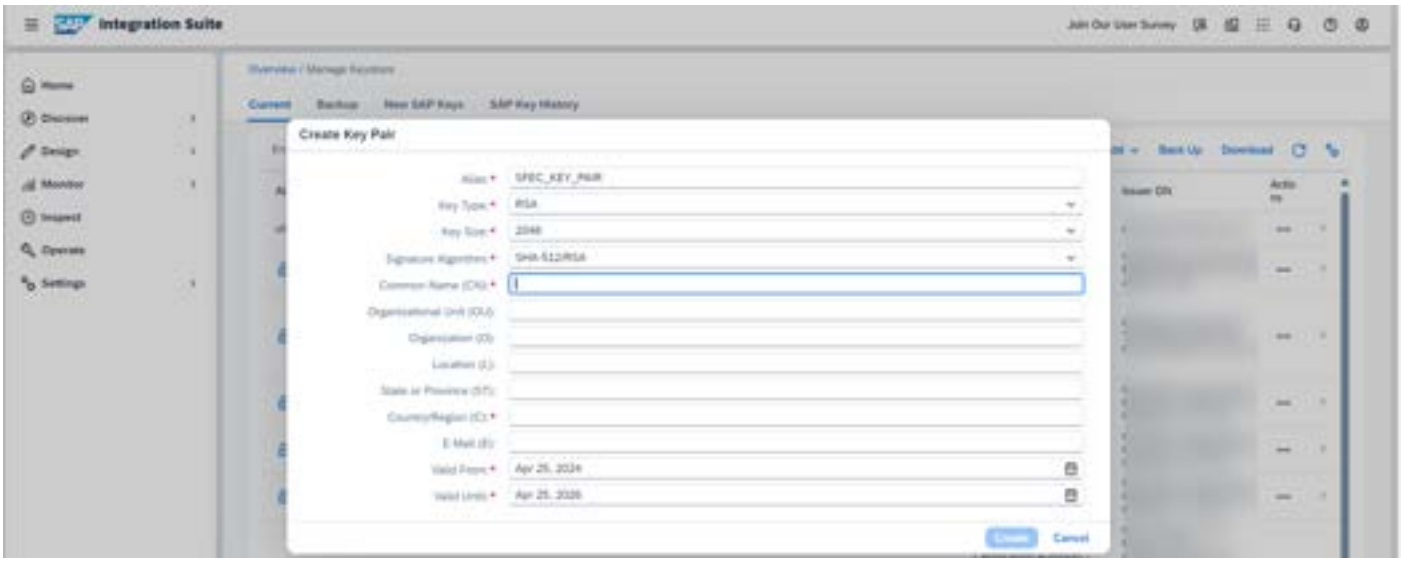
Create a new key pair creation is considered, if you have a valid key pair, you can re-use it by uploading the same. In SAP Cloud Integration Web UI Monitoring section, click on Keystore tile.



Click on the Create -> Key Pair

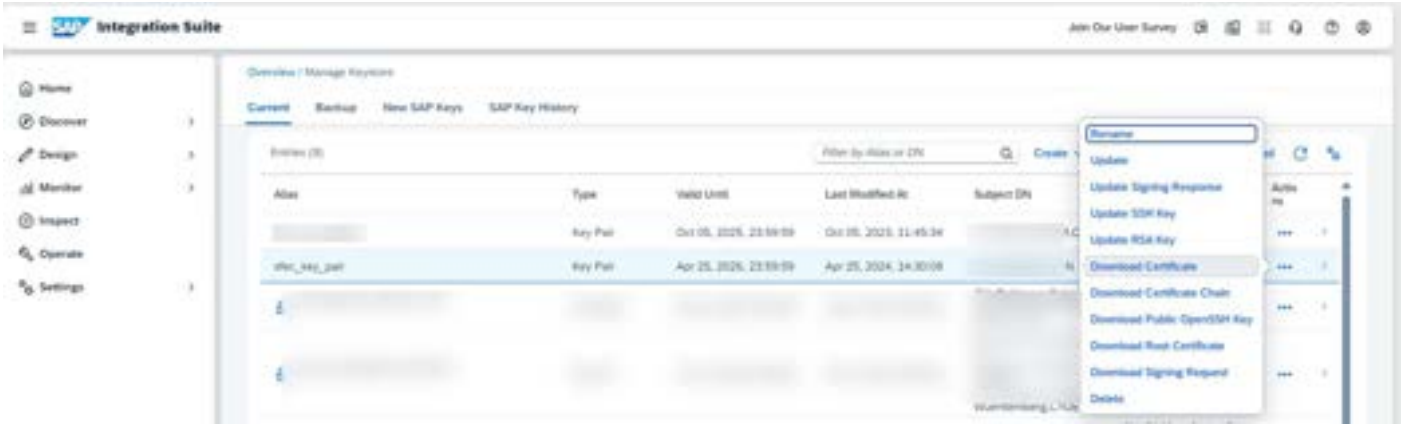
Provide the relevant details. The value for **Common Name (CN)** should be the user name exists in your SAP SuccessFactors instance who has the access/authority to invoke the SuccessFactors API through OAuth2 token.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.



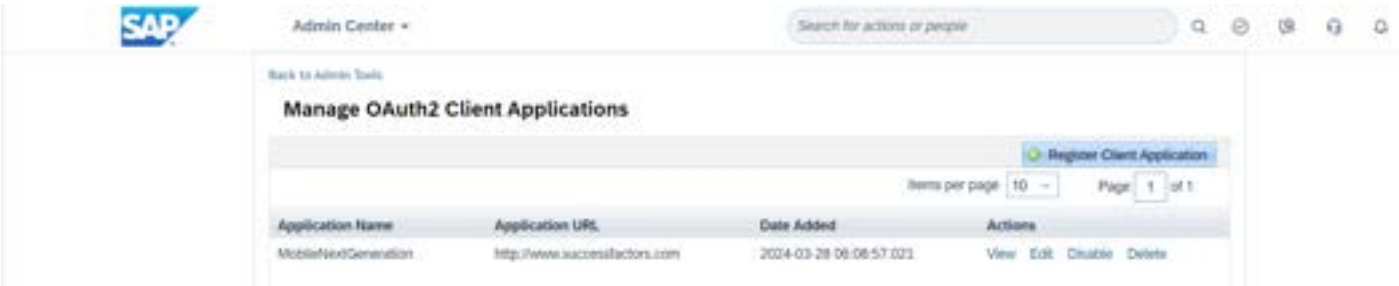
Click on Create button once finished providing details. Copy (or remember) the Alias name for further use.

After creation, download the certificate part of it. The public key of this file will be used while registering the OAuth2 client in SAP SuccessFactors system.



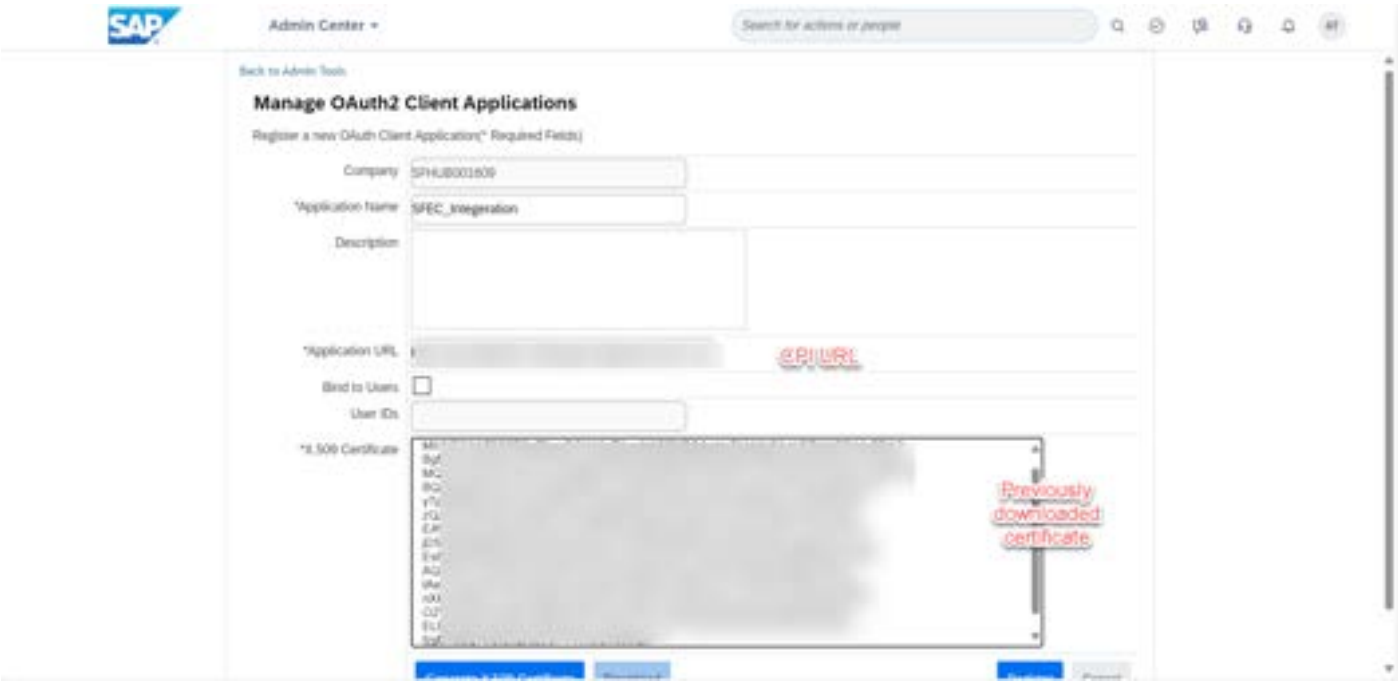
Step 2: Registering an OAuth2 client in SAP SuccessFactors System

Login to your SAP SuccessFactors system as administrator and then create a new OAuth2 Client in ‘Manage OAuth2 Client Applications” section.



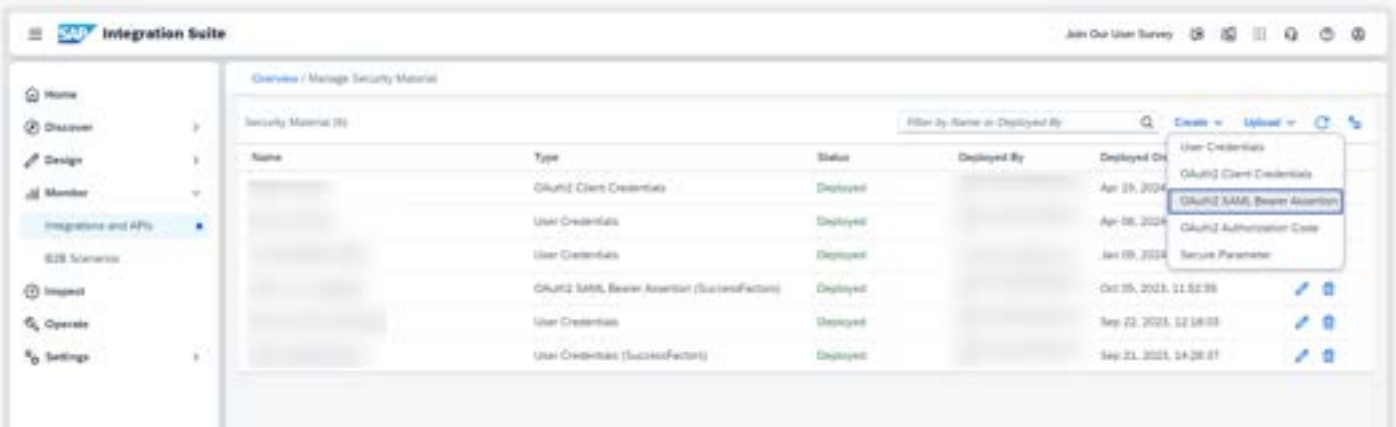
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

In creating OAuth2 Client Application, provide relevant details, copy the certificate part (the content between -----BEGIN CERTIFICATE----- and -----END CERTIFICATE-----) and add/paste that into X.509 Certificate place. Click on Register, and get hold of API Key (which will be treated as Client Key when deploying OAuth2 SAML Bearer credentials in SAP Cloud Integration)



Click on Register button.

Click on View button in Manage OAuth2 client application.Copy the API Key value, which will be treated as Client Key while deploying OAuth2 SAML Bearer credentials in SAP Cloud Integration.
In the Monitoring Section of SAP Cloud Integration, click on the 'Security Material' UI tile, and then click on Create -> OAuth2 SAML Bearer Assertion.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Provide the relevant details:

Name: your unique name for this key/credentials

Grant Type: OAuth2SAMLBearerAssertion

Audience: www.successfactors.com

Client Key: use the copied valued of the **API Key** we saw in steps earlier

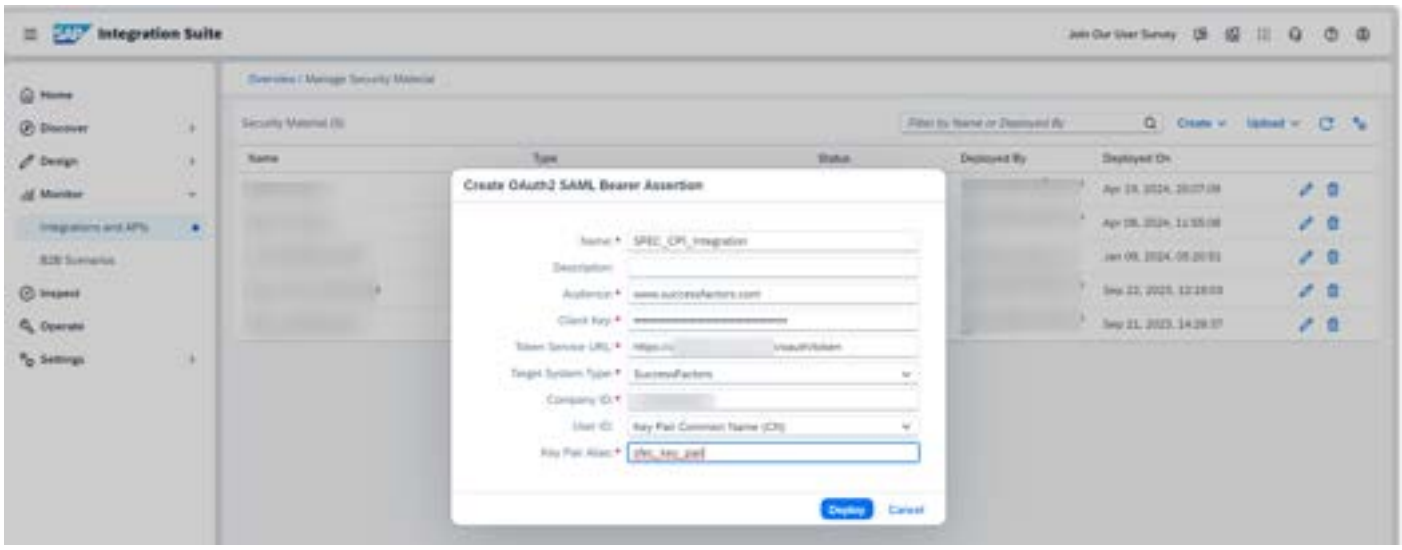
Token Service URL: **API URL + oauth/token**, sample = https://**api**salesdemo4.successfactors.com/**oauth/token**

Target System Type: SuccessFactors

Company ID: your SF company ID

User ID: Key Pair Common Name (CN)

Key Pair Alias: your unique name created in earlier instruction (found in Keystore)



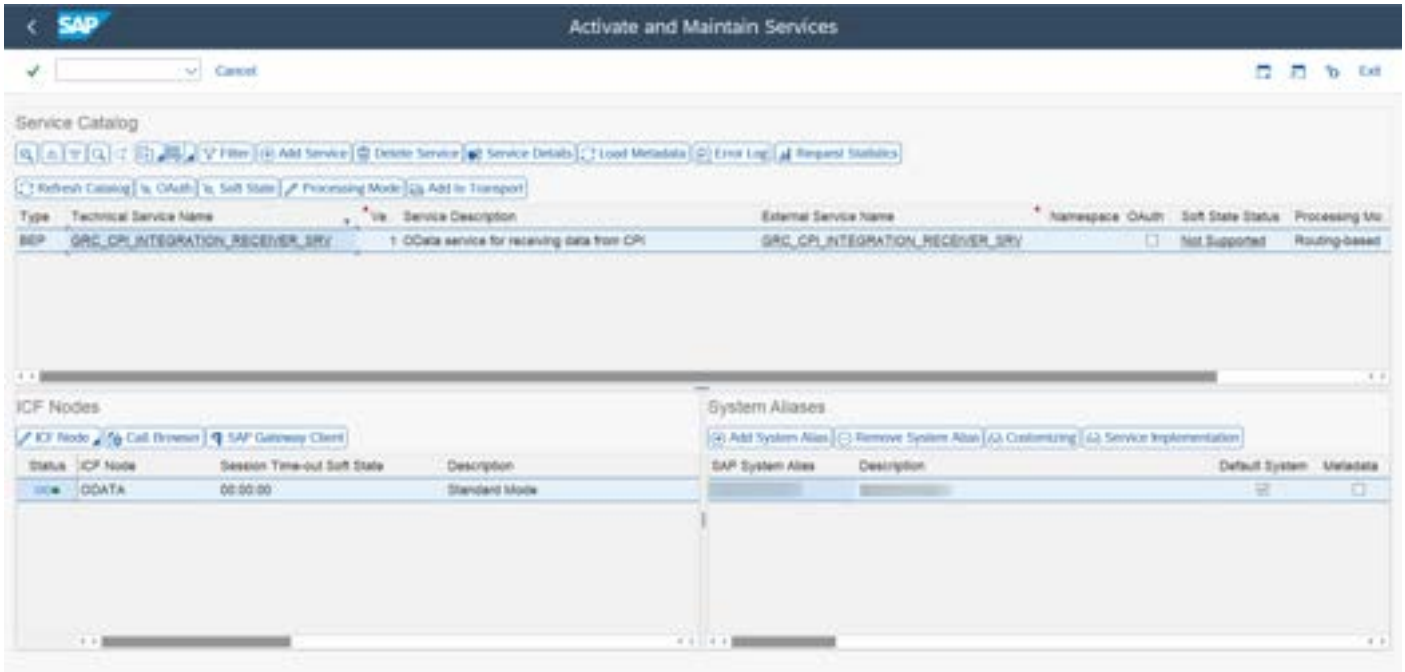
Deploy!

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.3.1.2 How to Register OData Service in GRC system

In GRC system, please follow below steps to register new OData service for CPI Iflow "*SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData*"

1. Go to /IWFND/MAINT_SERVICE transaction.
2. Add Service "GRC_CPI_INTEGRATION_RECEIVER_SRV" in Gateway client
3. Add system alias

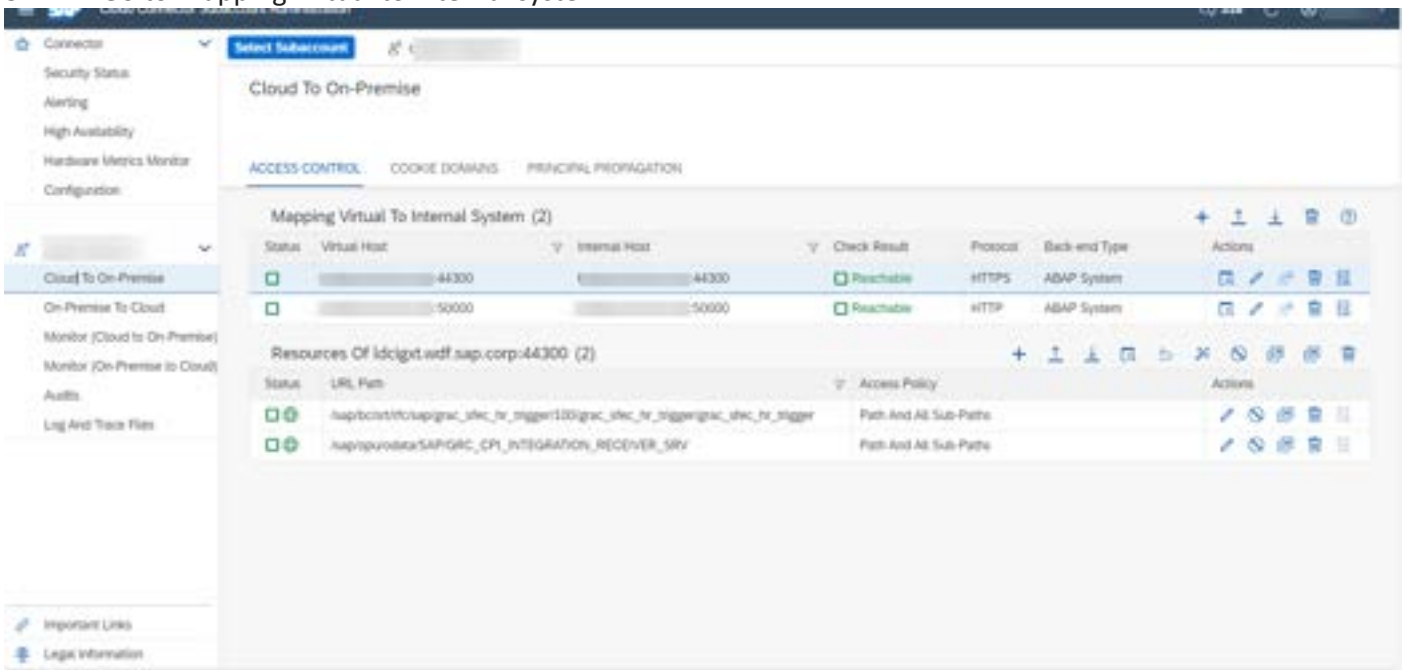


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

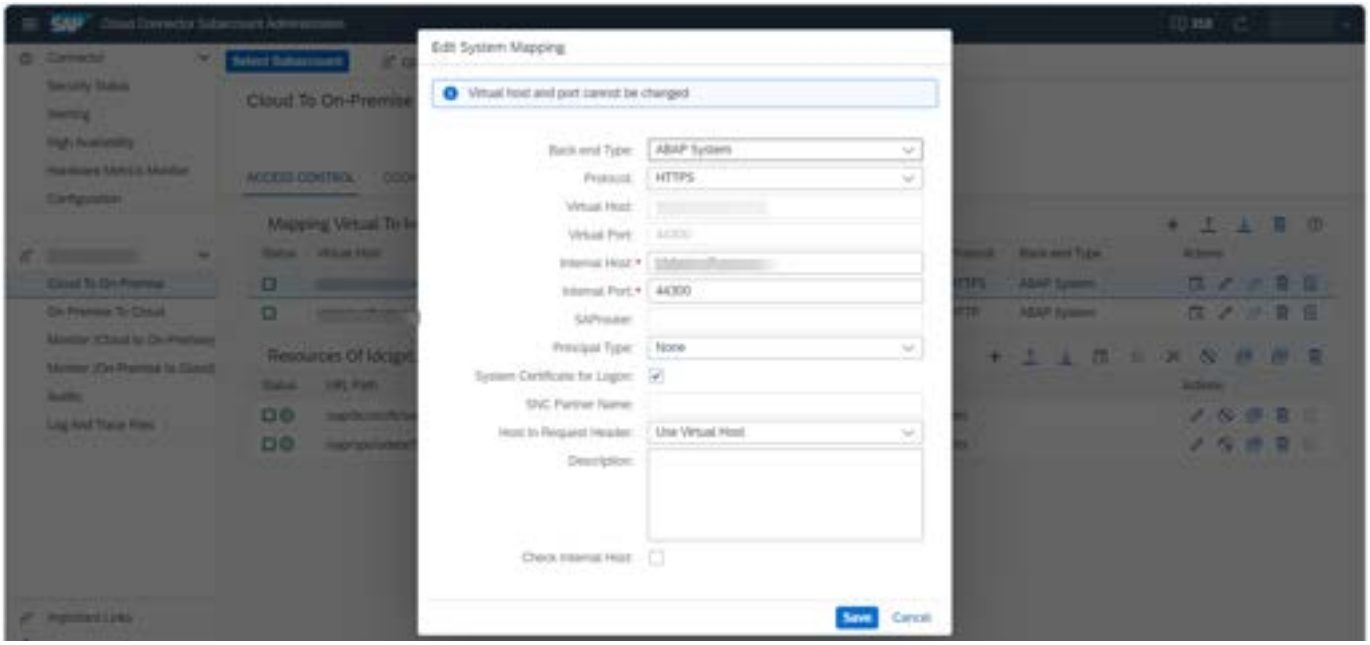
5.3.1.3 How to configure Cloud Connector

For Iflow *SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData*, please follow below steps to configure cloud connector:

1. Go to Cloud Connector
2. Select the subaccount - cloud to on-premise
3. Go to Mapping virtual to internal system



4. Create a new Virtual host with following details:



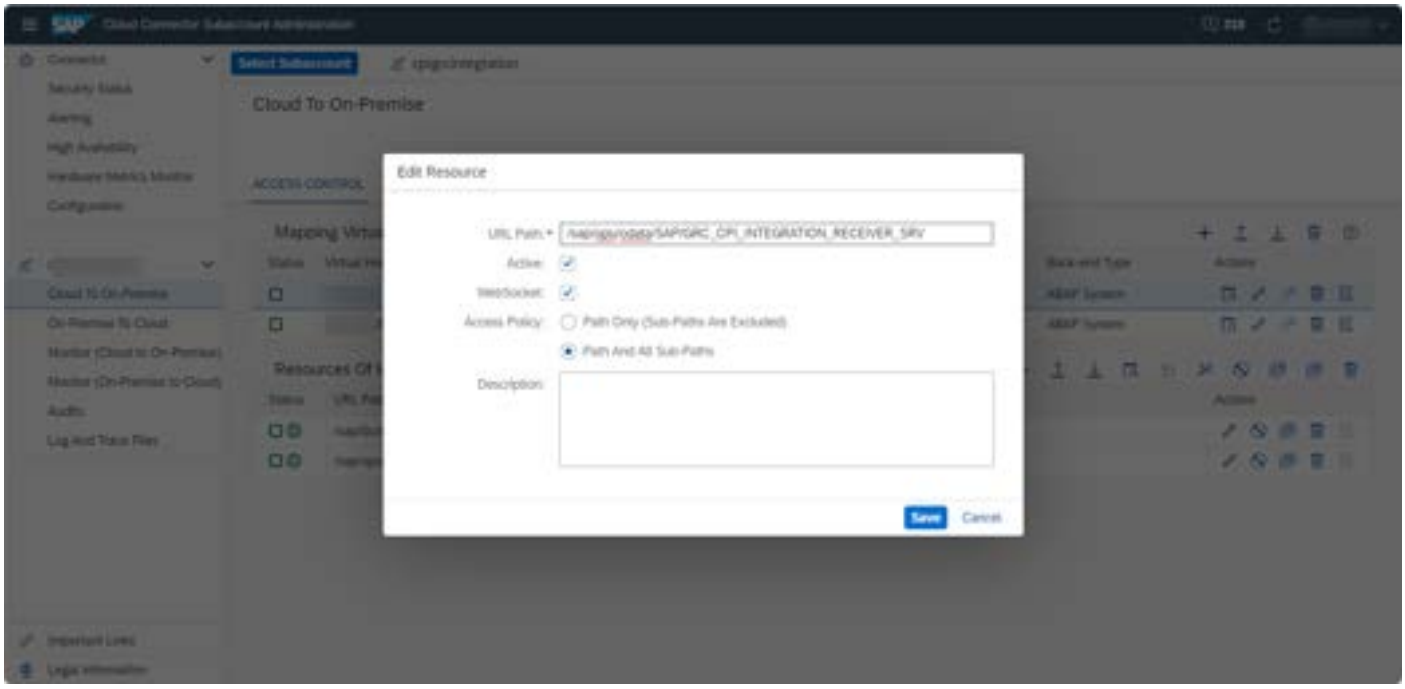
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5. Navigate to GRC system and add resources . Please mention following details:

a. URL Path : /sap/opu/odata

b. Active checked

c. Path and all sub path checked

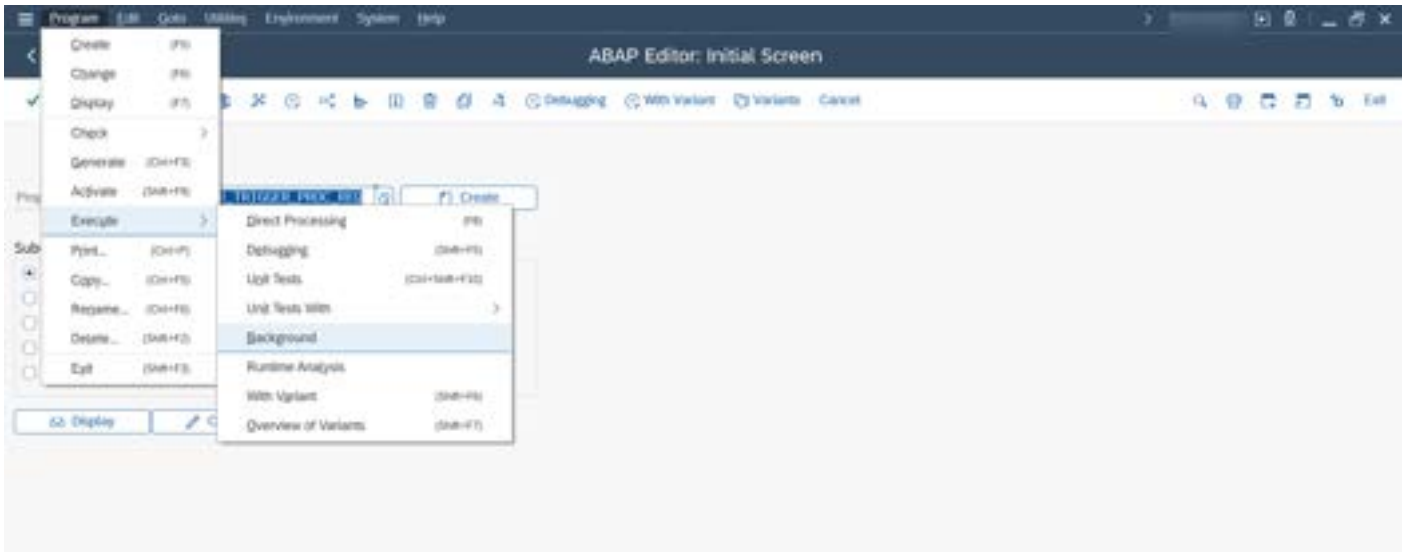


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

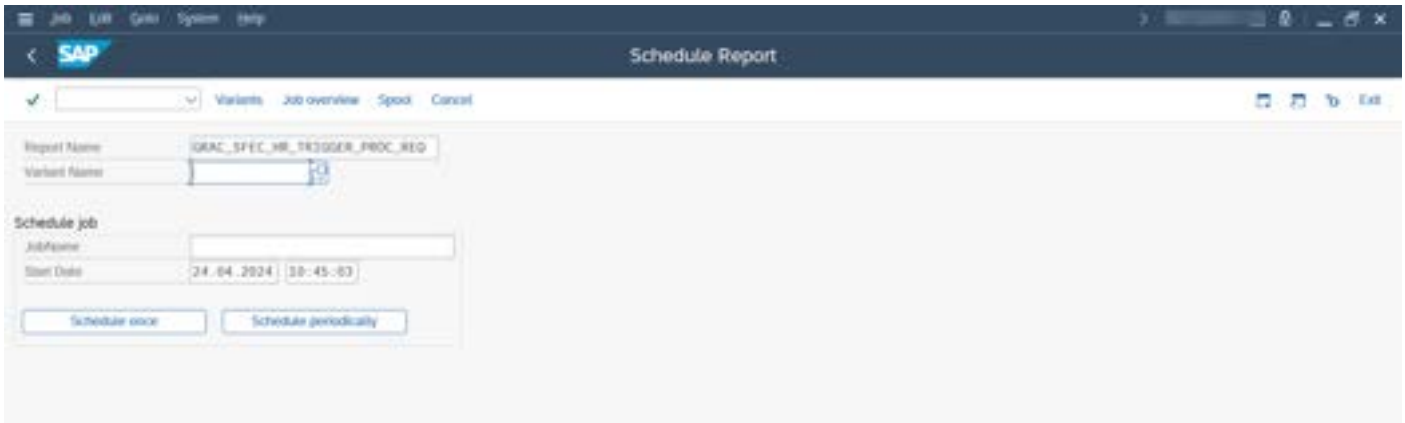
5.3.1.4 How to schedule new background job

For Iflow *SuccessFactors Employee Central to SAP GRC Access Control Integration for Employee Authorization_OData,* the HR Trigger access requests are not created automatically after scheduling CPI job. Schedule a background job after CPI job recurrence timing.

1. After successfully running the Iflow, please schedule a new background job for program 'GRAC_SFEC_HR_TRIGGER_PROC_REQ' in your GRC system.



2. Do not enter any value in notification parameter for variant.
3. Enter the variant and job name and schedule periodically.



3. The new background job will AUTOMATICALLY create all the SFEC HR Trigger request whose status in GRACSFECTRGUSER is OPEN.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.3.2 Configure and Deploy iFlow - SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP

To configure and deploy the SAP Access Control integration, you must copy the delivered integration package to your workspace and modify it.

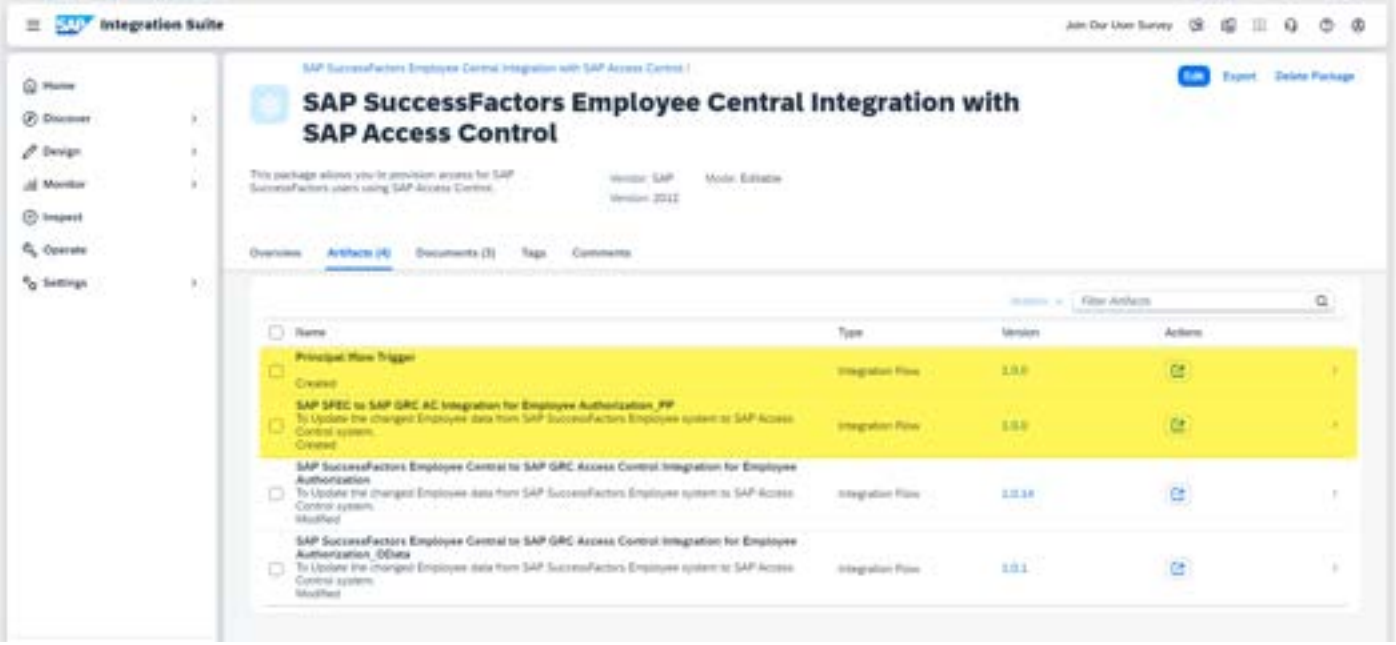
Prerequisites

1. *SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP* Iflow is introduced to support principal propagation and remove Basic Authentication from GRC receiver adaptor**.**

Process

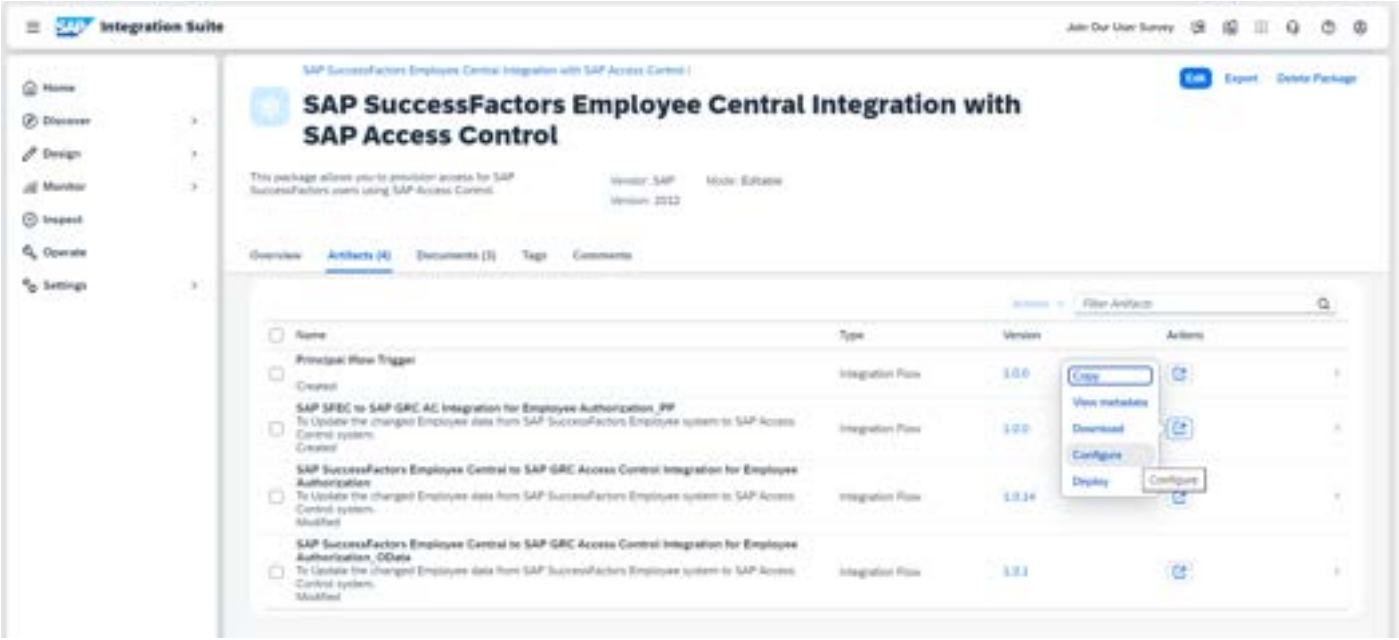
1. On SAP Cloud Integration, choose the *Discover* icon. Choose *SAP Access Control Integration with SAP SuccessFactors Employee Central*

2. In the **Discover** tab, select the integration flow (*SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP*) and click *Copy to Workspace*.

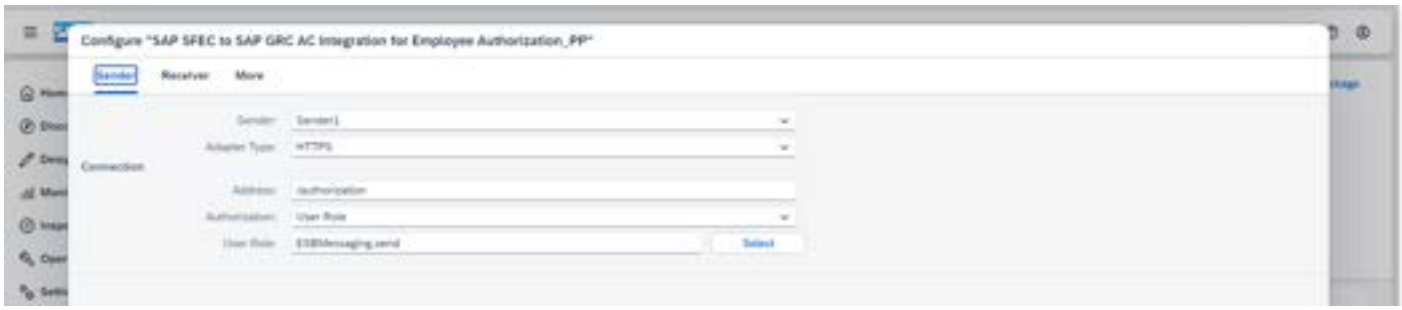


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

3. In the *Artifacts* tab, select the iFlow package, click the *Actions* icon, and select *Configure.*

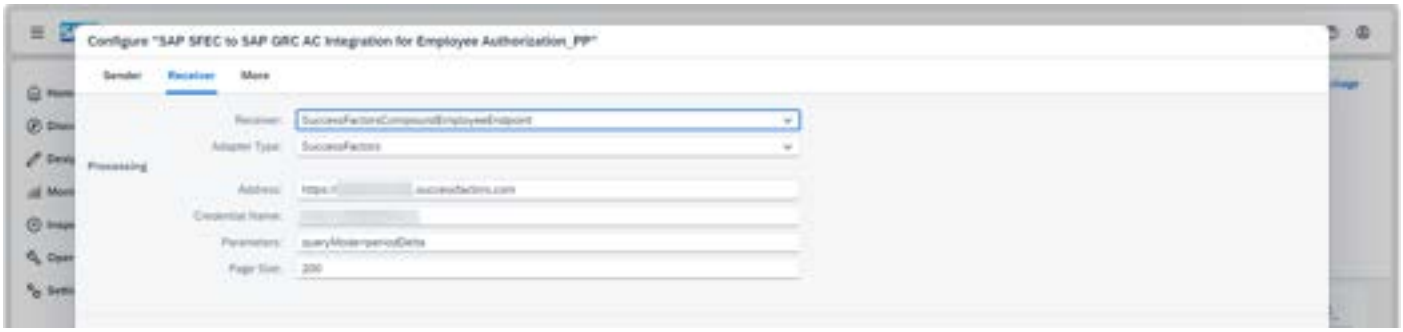


4. Create a sender for Principal Propagation:
a. On the *Sender* tab, select the Sender1
b. Enter the *Adapter Type* as HTTPS.
c. Enter *Address* as "/authorization".
d. Enter *Authorization* as "User Role"
e. Enter User Role as "ESBMessaging.send"



5. Create a receiver for SFEC:
a. On the *Receiver* tab, select the SAP SuccessFactors receiver from the dropdown.
b. Enter the address and credential name for the SAP SuccessFactors system.
c. Allow the authentication type to *Basic Authentication/ OAuth Authentication*.
(For OAuth Authentication please check section - 5.3.1.1)

© 2019 SAP SE or an SAP affiliate company. All rights reserved.



6. Create a Receiver for SAP Access Control:
a. On the *Receiver tab,* select the SAP Access Control receiver from the dropdown.
b. Provide the address and credential name for the SAP Access Control receiver. The URL is built based on the *web-service calculated URL* you created in *Create a Binding for Web Services*. Append it with the hostname and port.
c. Provide Proxy-Type as On-Premise and Location ID as location maintained in cloud connector
d. Provide Authentication as None.
e. Click on Save.

7. Configure the execution parameters for the initial data load and for subsequent recurring integration runs.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Initial Data Load Configuration

1. Choose the *Parameters* tab.
2. *Cloud Connector Header* should be maintained as
   a. *Authorization|Proxy-Authorization (in case Principal Iflow Trigger has authentication as OAuth2 Client Credentials)*
   b. *Blank (in case Principal Iflow Trigger has authentication as Basic Authentictaion)*
3. For the initial load, the first time you run the integration, provide the *ExecutionFromDate.* The system selects Employee Central records that were created or modified from this date forward.
4. *FutureNoOfDays*: The parameter controls how far into the future new hires can be processed. Enter the number of days beyond the today's date to consider for validity of employee records.

Example

The FutureNoOfDays is 20.
New Hire 1 has a start date of today (7/30/2016)
New Hire 2 has a start date of August 10 (8/10/2016)
New Hire 3 has a start date of September 15 (9/15/2016)
SAP Cloud Integration will process new hires that fall within the range of today's date + 20 days. Employees with start dates on or before August 19 (July 30 +20 days) will be processed. Employees with start dates after August 19 will not be processed. In our example, New Hires 1 and 2 will be processed. New Hire 3 will not be processed.

4. Choose the *Timer* tab to schedule the initial load job.
5. Give the *Timer* (job) a descriptive name such as "InitialSFdataload"
6. Check *Run Once* for the initial data load.
7. Click *Save*.

When you are ready to execute the initial load, click *Deploy.*

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Recurring Integration Configuration

To set up a recurring job:

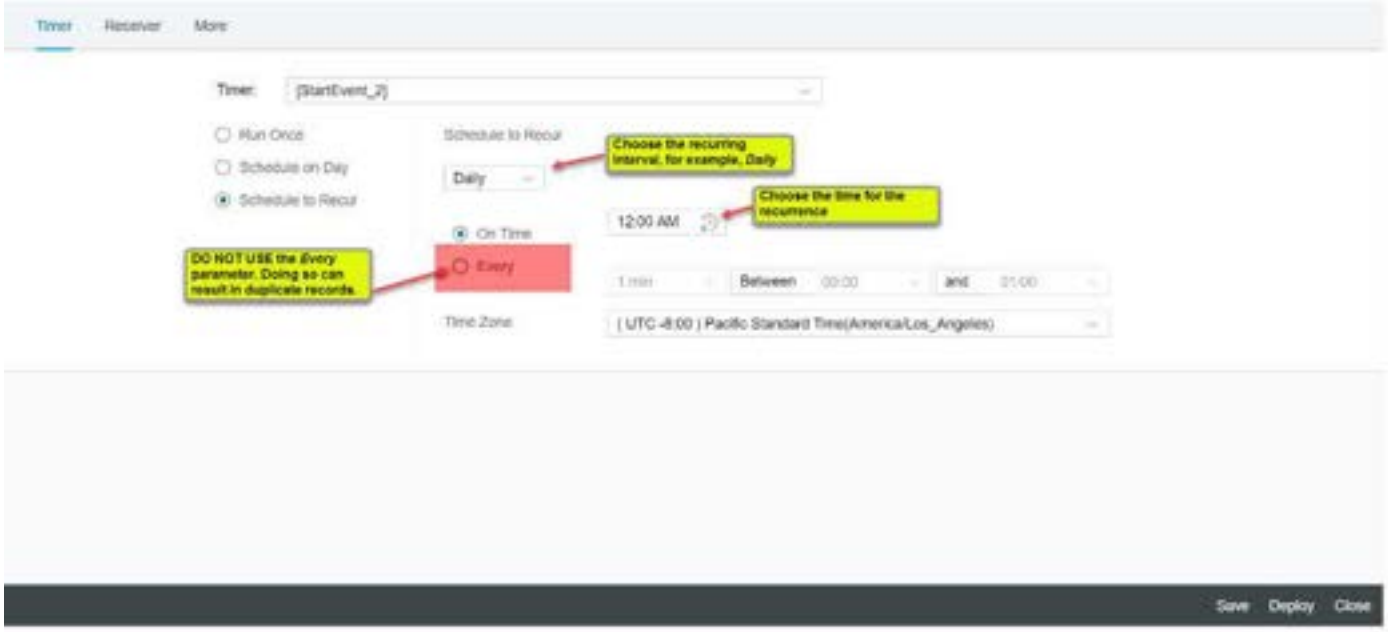
1. Choose the *Parameters* tab.
2. Leave the *ExecutionFromDate* empty.
3. *FutureNoOfDays*: Enter the number of days beyond the current run date for which you want to include records
4. Click *Save.*
5. Choose the *Timer* tab to schedule the recurring job, and select a timer from the dropdown menu.
6. Click **Schedule to Recur**.
7. Select the recurring interval, for example, *Daily* or *weekly.*
8. Select the *On Time* radio button to fill in the time for your recurring data transfer.

Warning

Do not select Every radio button! A recurring job should not be scheduled to run more than once in the same day. Doing so can result in duplicate records.

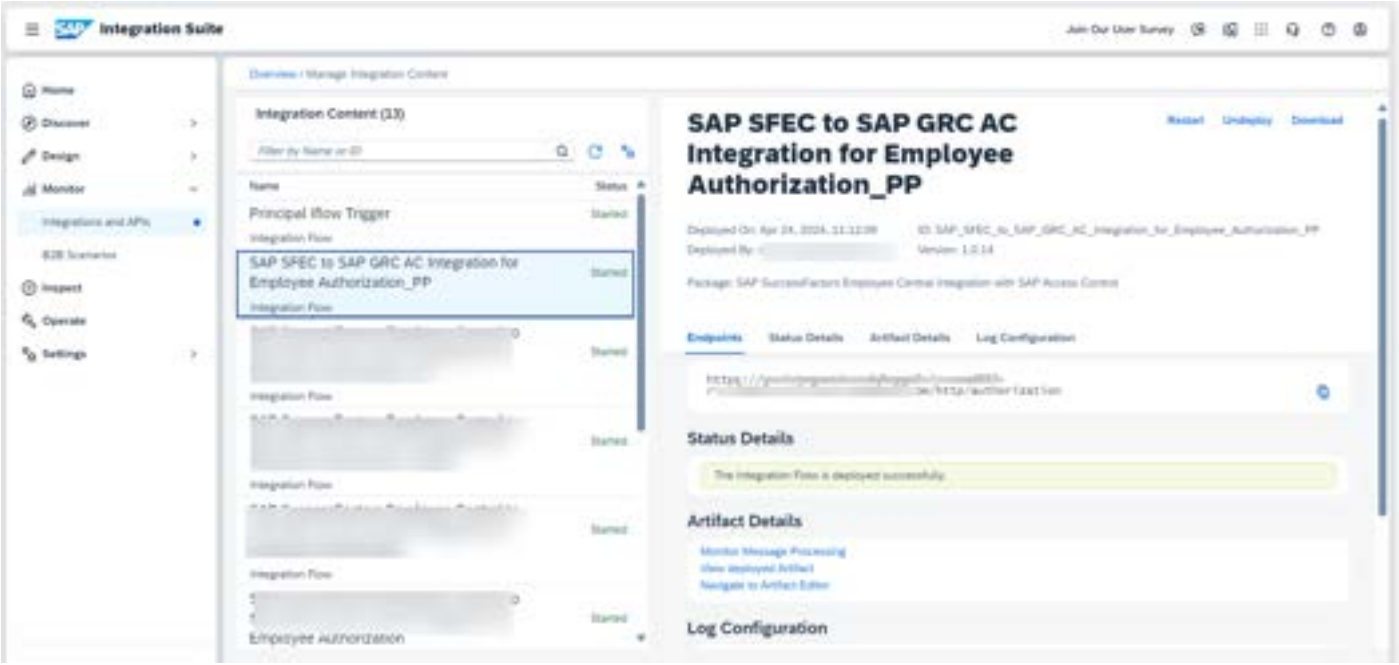
9. Click *Save*.

When you are ready to execute the job series, click *Deploy.*

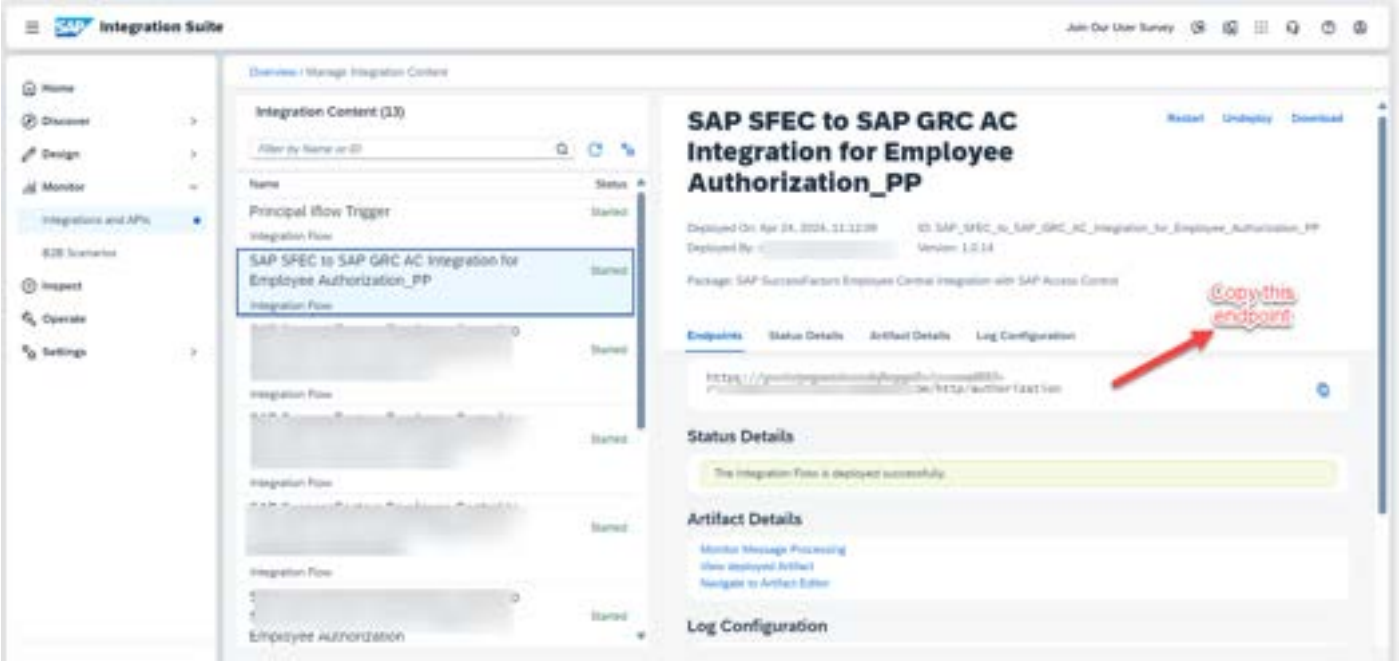


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

10. Once deployed, navigate to Monitor tab then to Overview and Manage Integration Content



11. Go to Endpoints tab and copy the endpoint.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

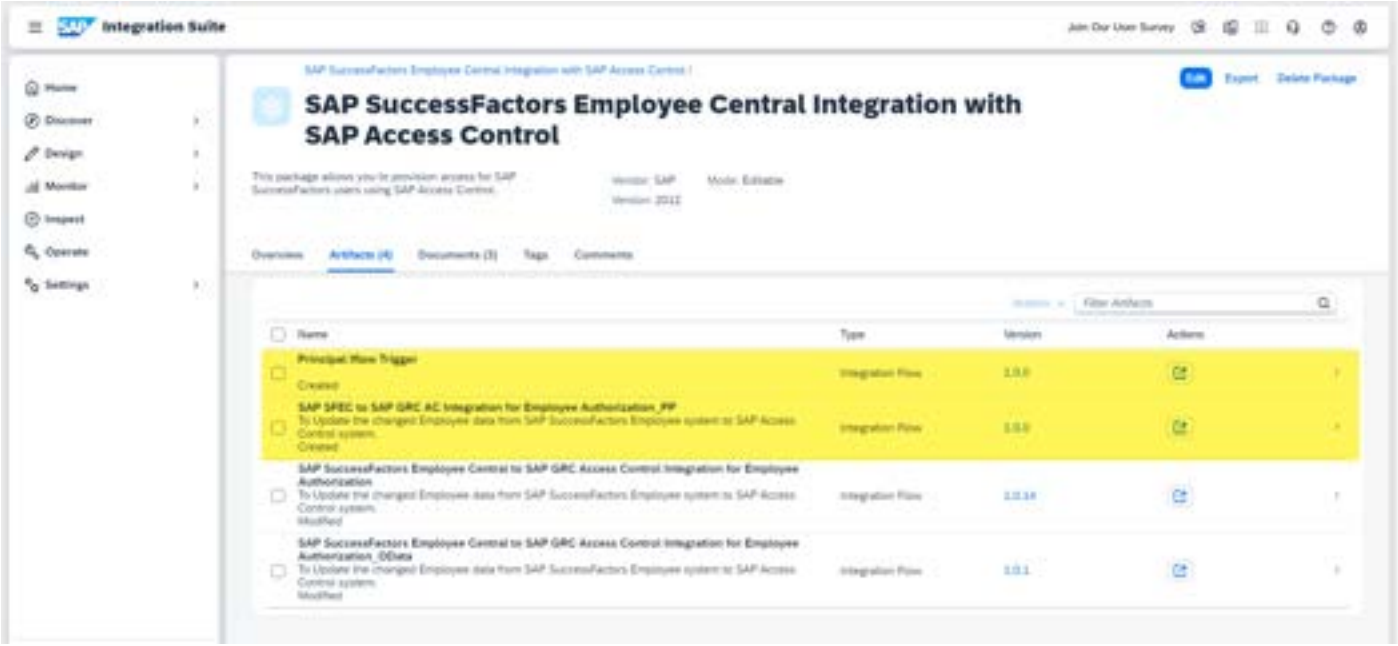
5.3.2.1 Configuring Principal Iflow Trigger

Prerequisites

1. *SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP* Iflow is deployed.

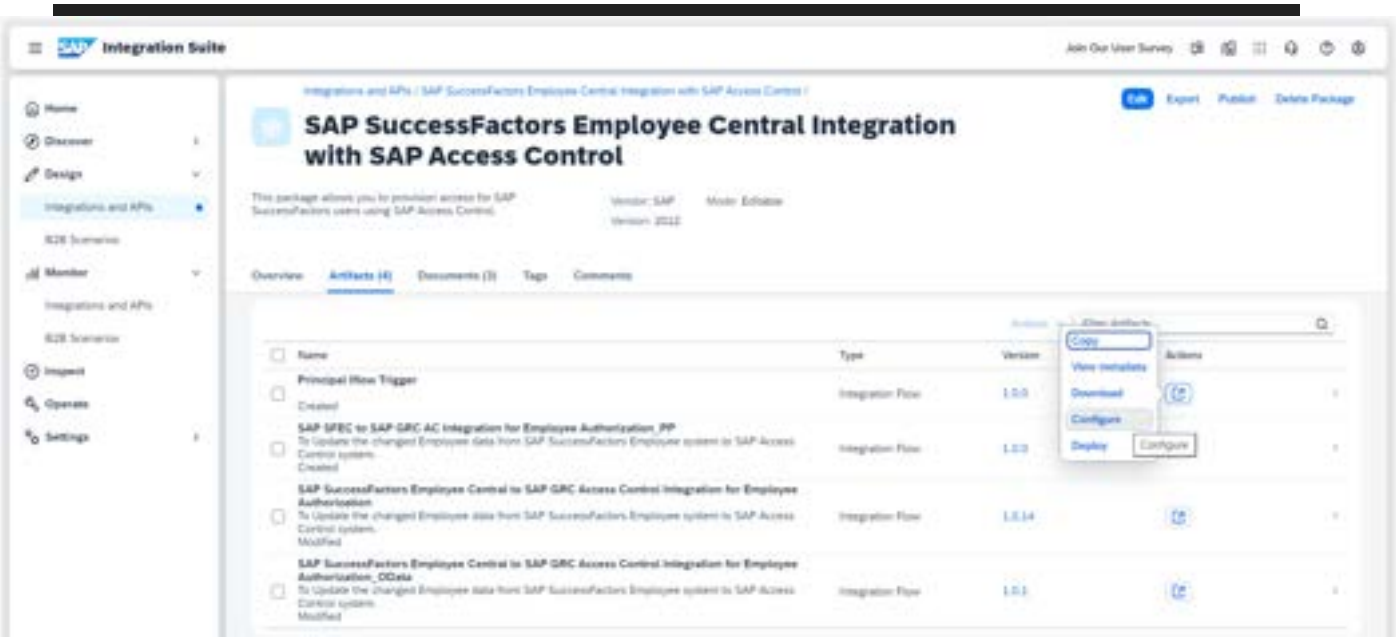
Process

1. On SAP Cloud Integration, choose the *Discover* icon. Choose *SAP Access Control Integration with SAP SuccessFactors Employee Central*
2. In the **Discover** tab, select the integration flow (*Principal Iflow Trigger*) and click *Copy to Workspace*.



3. In the *Artifacts* tab, select the iFlow package, click the *Actions* icon, and select *Configure.*

© 2017 SAP SE or an SAP affiliate company. All rights reserved.



4. Create a sender for Principal Propagation:

a. On the *Receiver* tab, select the Receiver

b. Enter the *Adapter Type* as HTTP.

c. Enter *Address* as endpoint of deployed iflow *SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP*.

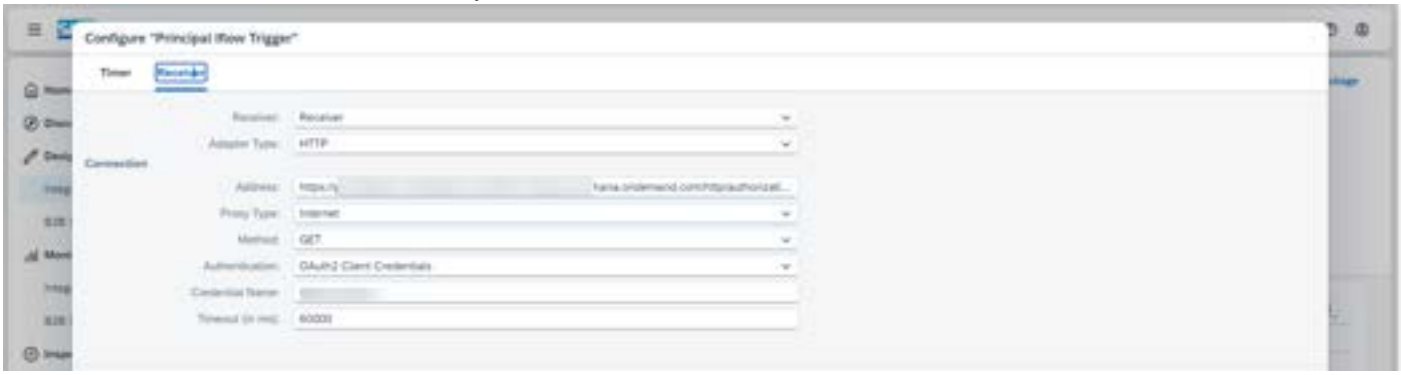
d. Enter *Proxy Type* as Internet.

e. Enter *Method* as GET.

d. Enter *Authorization* as:

1. Basic Authentication (use valid IDP user credentials to trigger *SAP SFEC to SAP GRC AC Integration for Employee Authorization_PP* iflow)
2. OAuth2 Client Credentials (configure based on section 5.3.2.1)

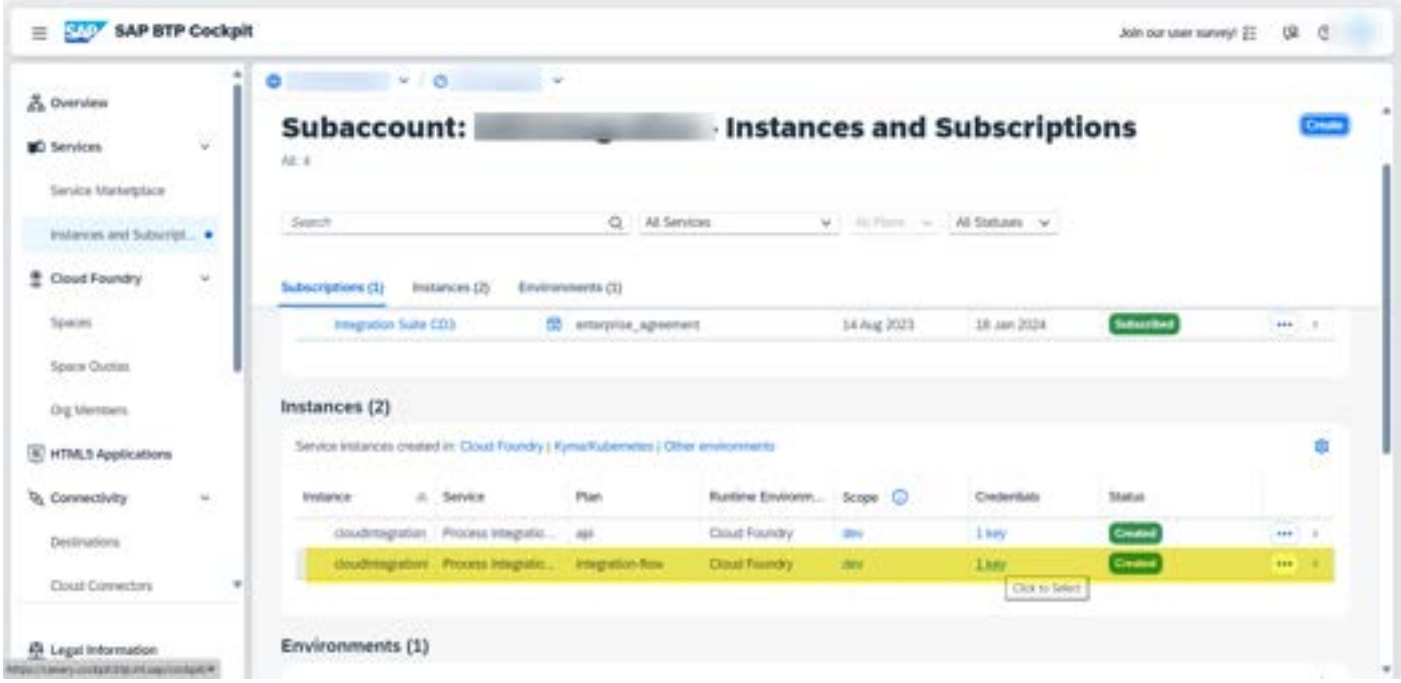
e. Enter *Credential Name* from security material.



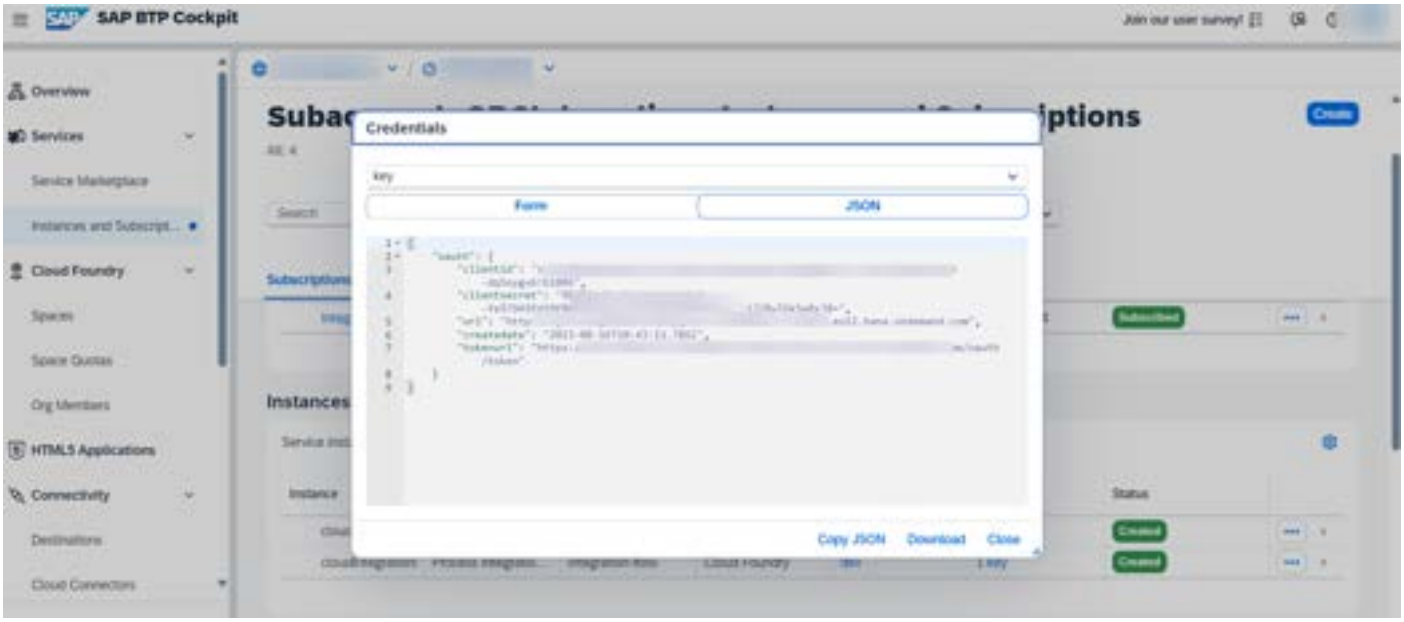
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.3.2.2 Configuring OAuth2 Client Credentials in CPI Security Material

Navigate to SAP BTP Subaccount and get the instance details from below:
1. Go to BTP Subaccount
2. Navigate to Instances & Subscription

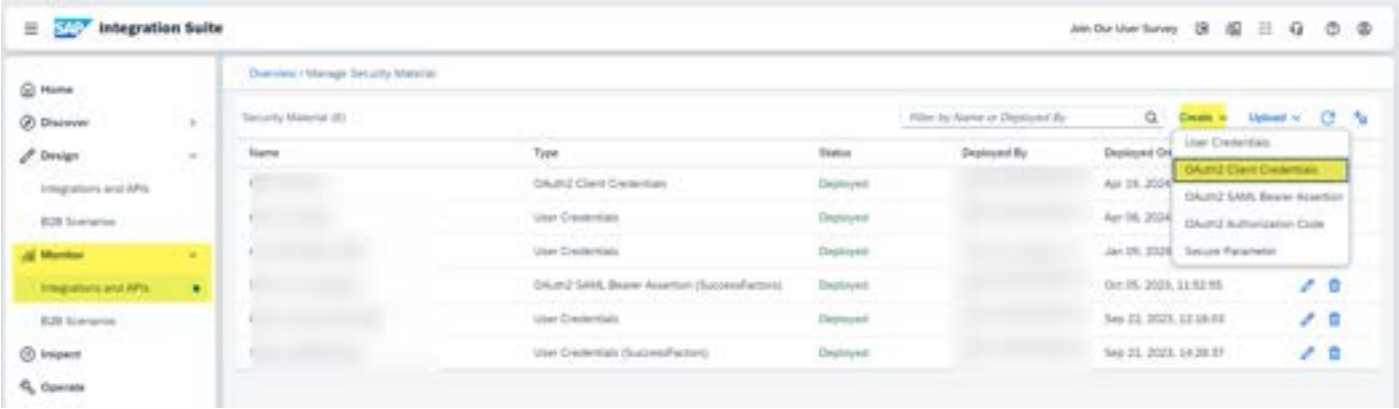


3. Click on Credential Key of the Instance with Plan as Integration Flow.
4. Copy all the fields

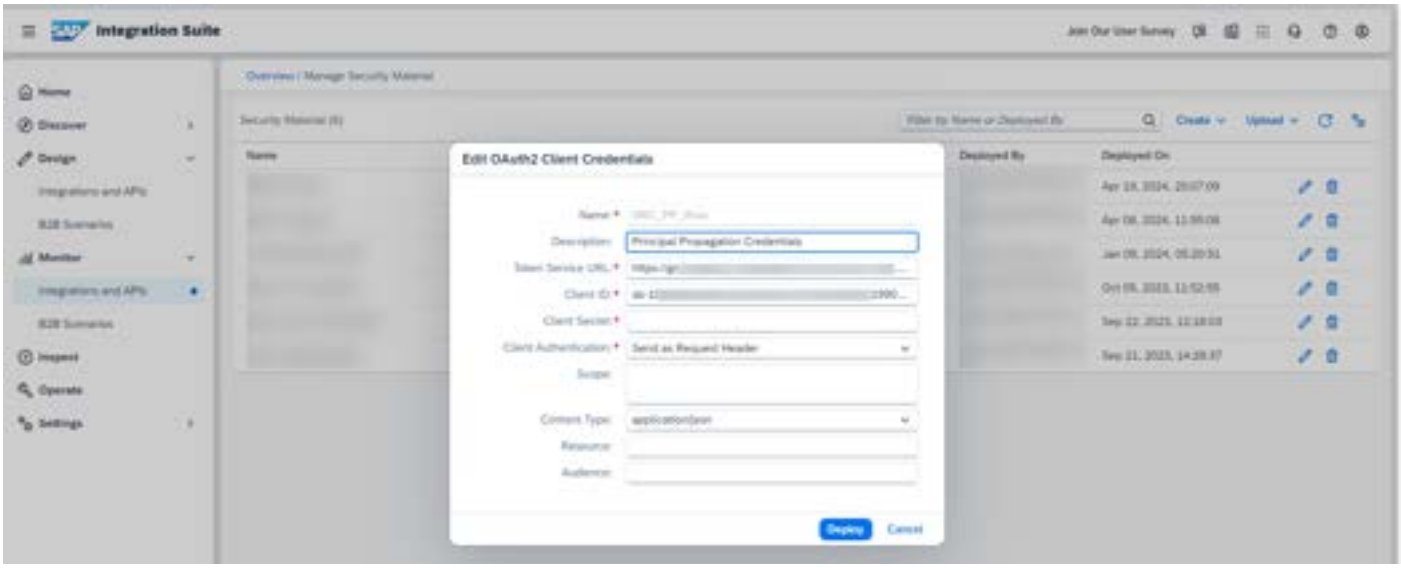


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Navigate to CPI -> Monitor -> Security Materials
Create a new OAuth2 Client Credential for Principal Propagation Iflow
1. Go to CPI -> Security material
2. Create OAuth2 Client Credentials



3. Enter the following values:
Enter Name - <Credential_Name>
Token URL - <BTPInstance_Token_URL>
Client ID - <BTPInstance_Client_ID>
Client Secret - <BTPInstance_Client_Secret>
Client Authentication - Send as Request Header
Content Type - application/json



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

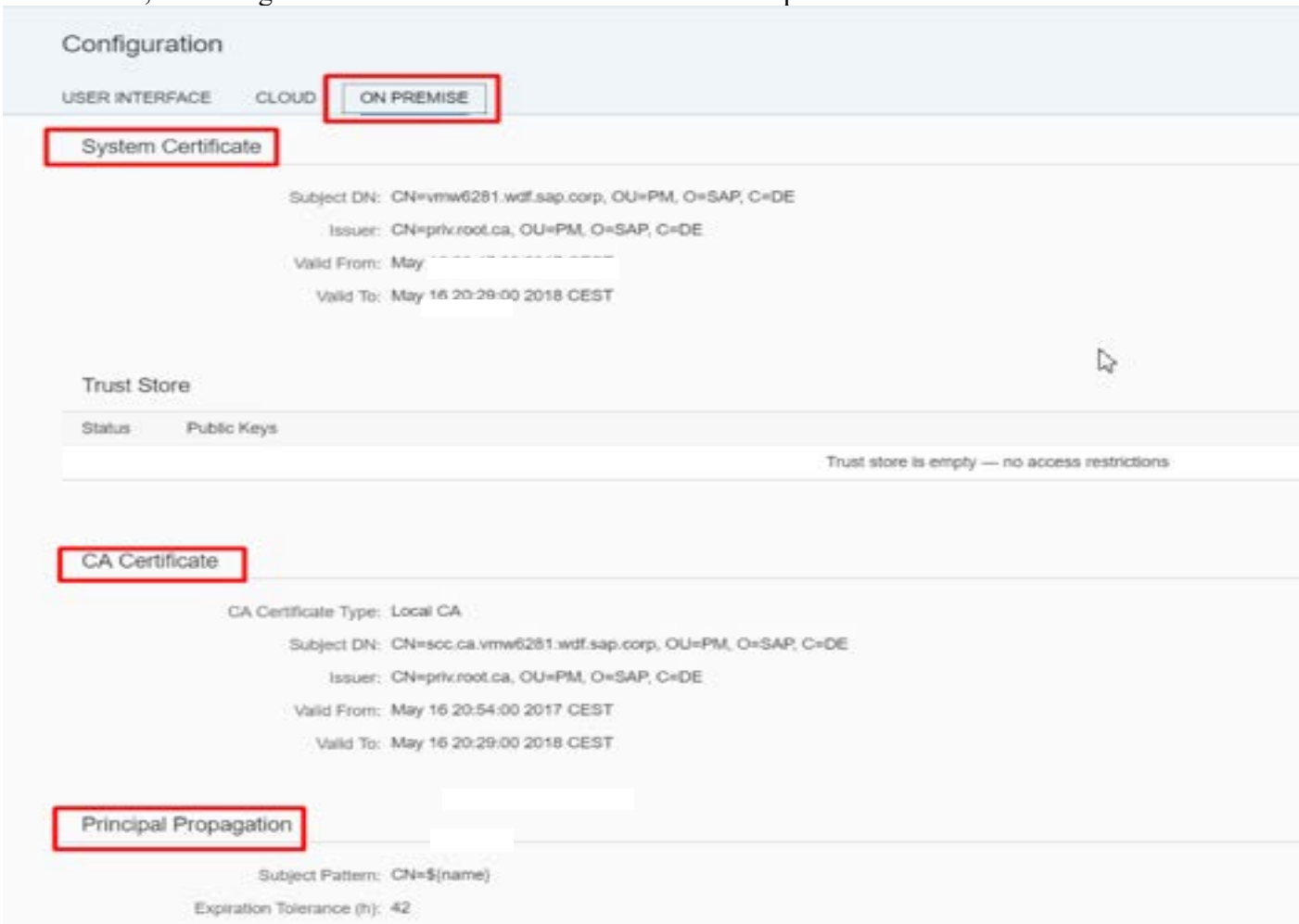
5.3.2.3 Configuring Cloud Connector and Backend on-Premises GRC system

Configure cloud connector as mentioned in Section 5.1

Configuring the certificates on the SAP Cloud Connector

The configuration in the cloud connector relevant to Principal Propagation relies on three different configuration elements: System Certificate, CA Certificate and principal propagation.

In a nutshell, the configuration of each certificate is done in three steps.



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Steps to follow to configure on-Premise certificates:

1. Generate a certificate signing request.
2. Use the PKI to sign the certificate.
3. Upload the signed certificate in the appropriate place of the Cloud Connector.

UI Certificate

In the context of the SAP Cloud Connector (SCC), create the UI Certificate. This certificate should match the full qualified domain name of the server hosting SCC. (CN, OU, O, C)

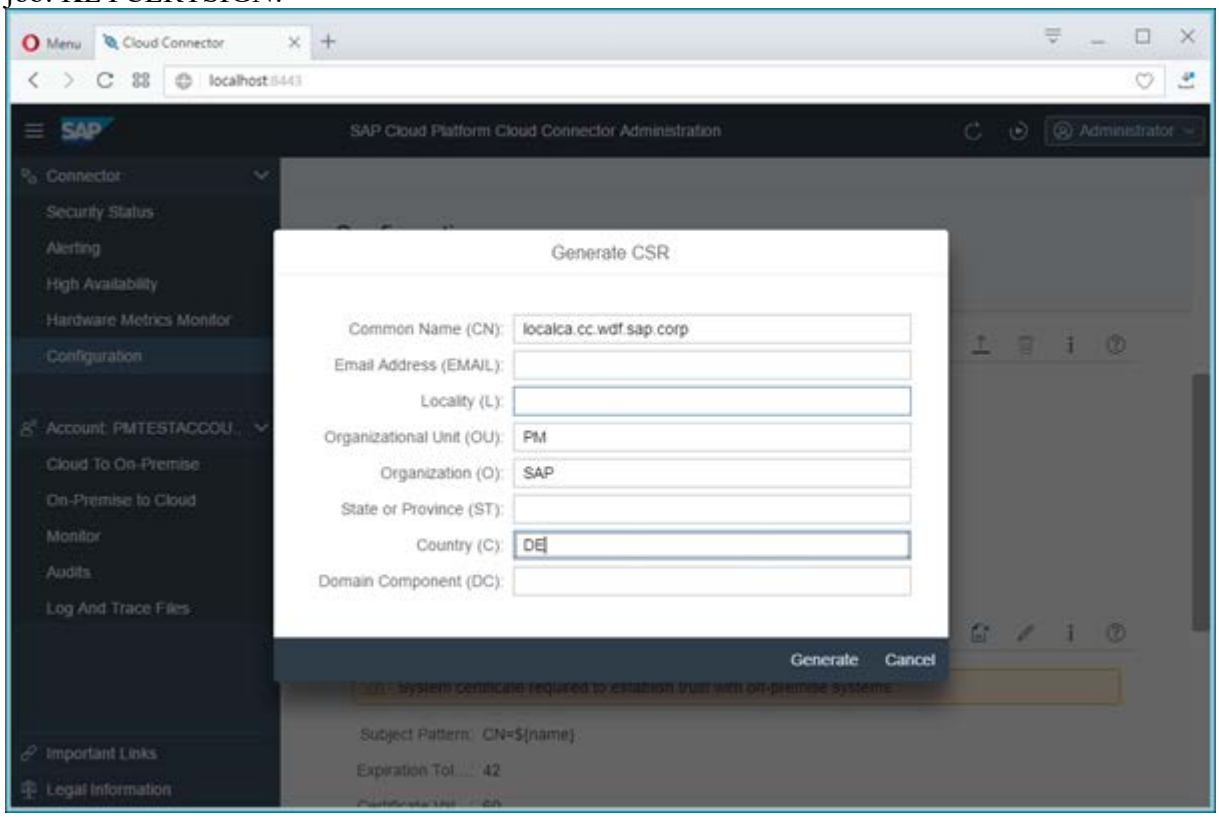
Once the certificate is generated signed by CSR / self-signed. Then upload the signed CSR which is now called certificate and stored in a DER format.

System certificate

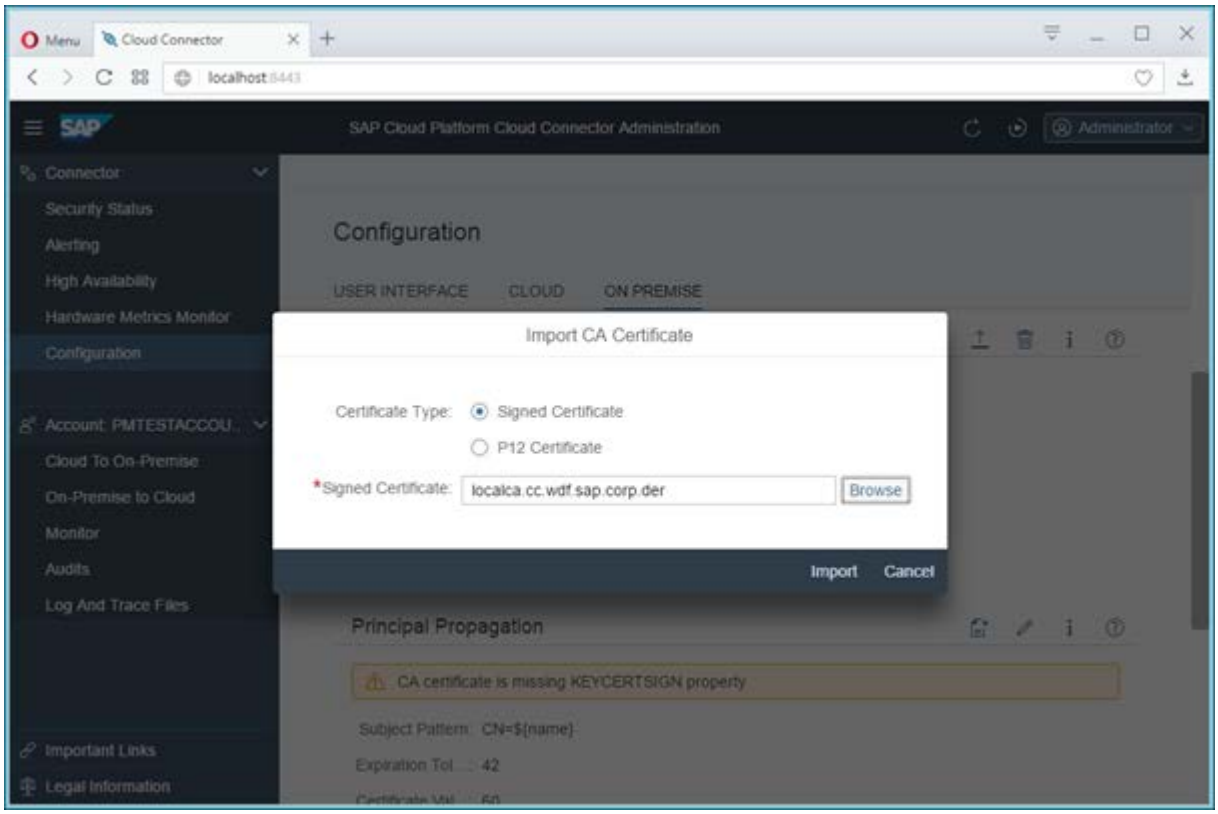
Once the UI Certificate configured, the system certificate can reuse it.

CA certificate

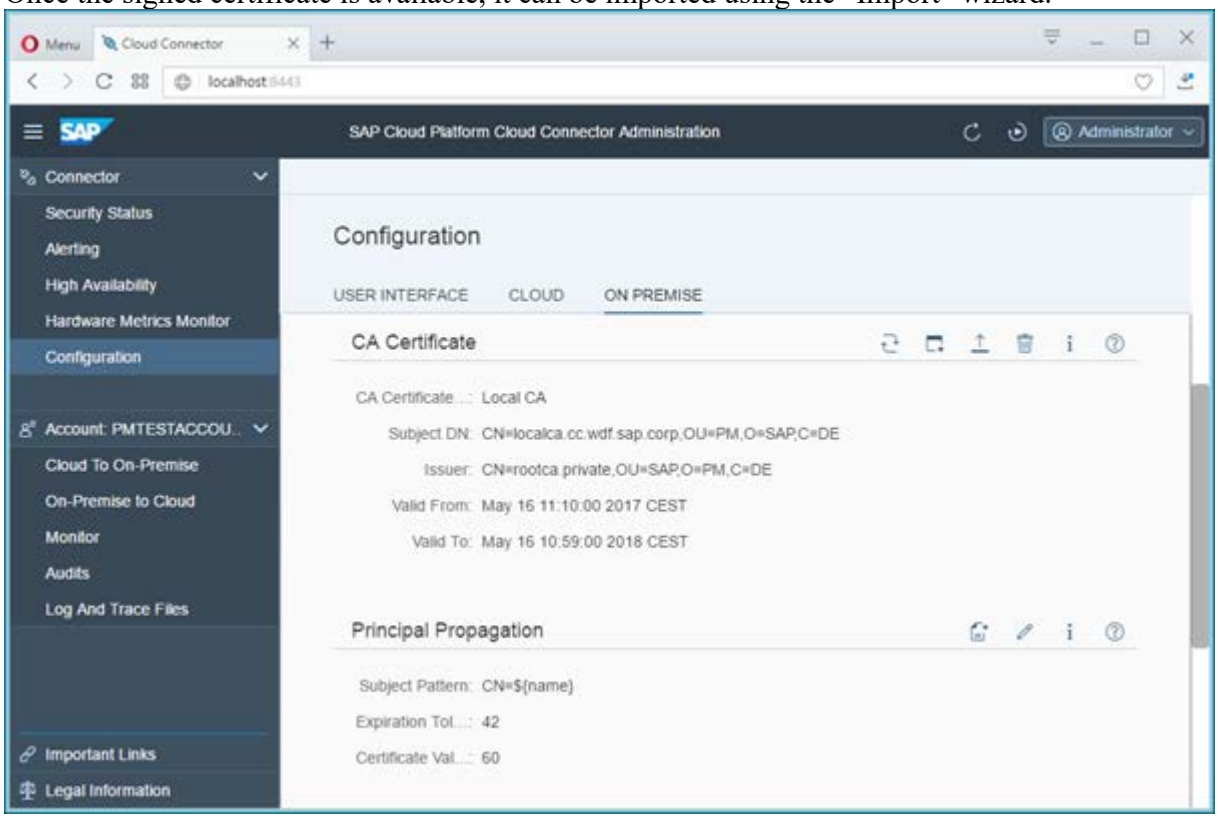
This certificate will be used to sign the short-lived certificate that will be passed to the backend to authenticate the logged in user. The important detail is that this specific certificate needs a very specific property to be able to do its job: KEYCERTSIGN!



© 2019 SAP SE or an SAP affiliate company. All rights reserved.



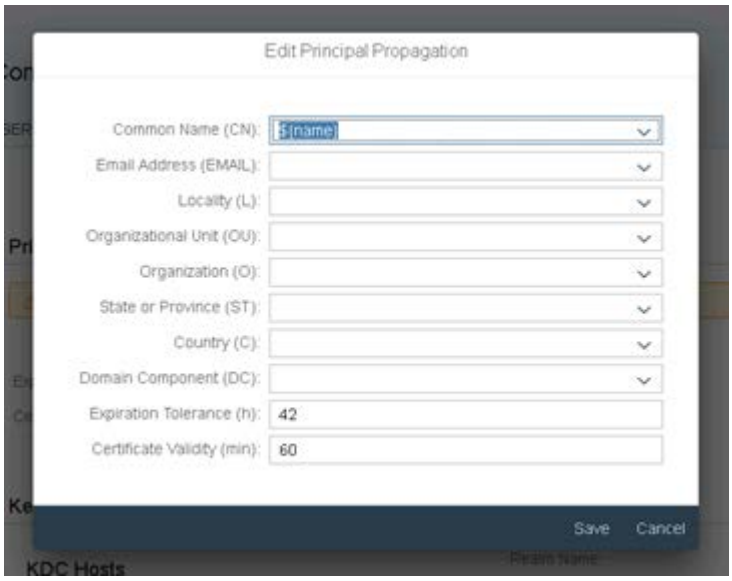
Once the signed certificate is available, it can be imported using the “Import” wizard.



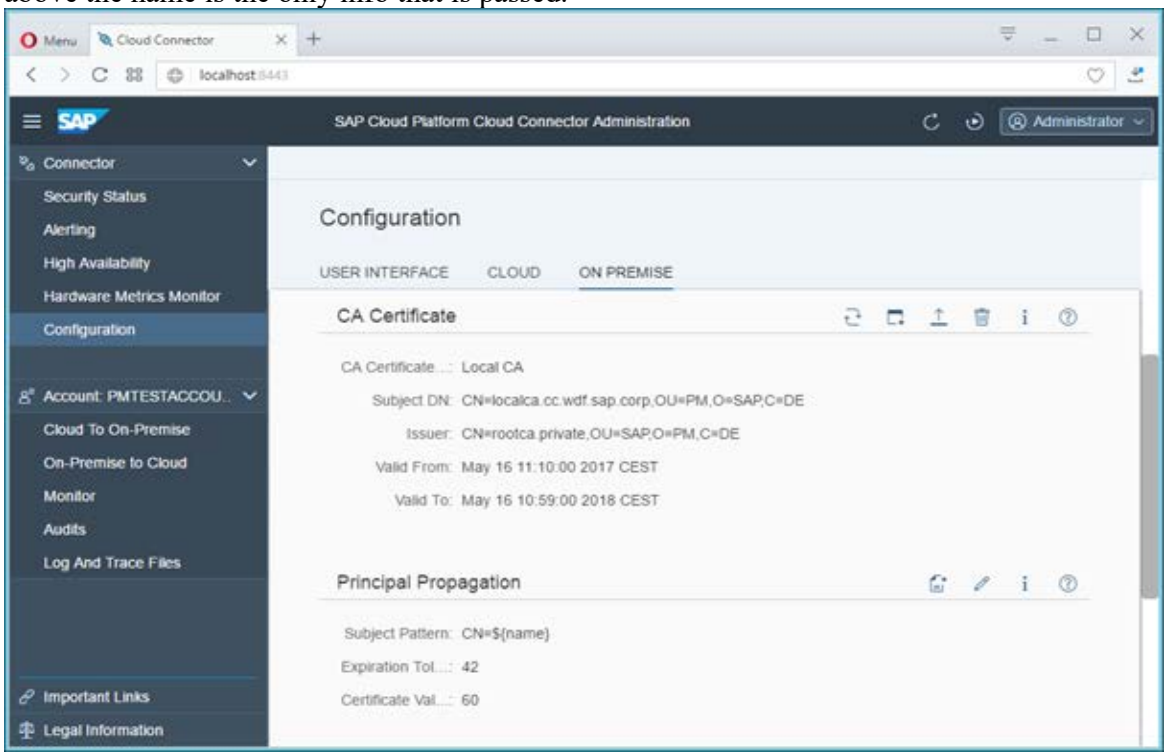
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Principal Propagation

Under Principal Propagation generate a sample certificate (the first icon in the row). One of the roles of the SCC in the context of Principal propagation is to generate short-lived certificates based on some identity information retrieved from the logged in user.
We will use the generated sample certificate later in our configuration to build our rule in the CERTRULE transaction.

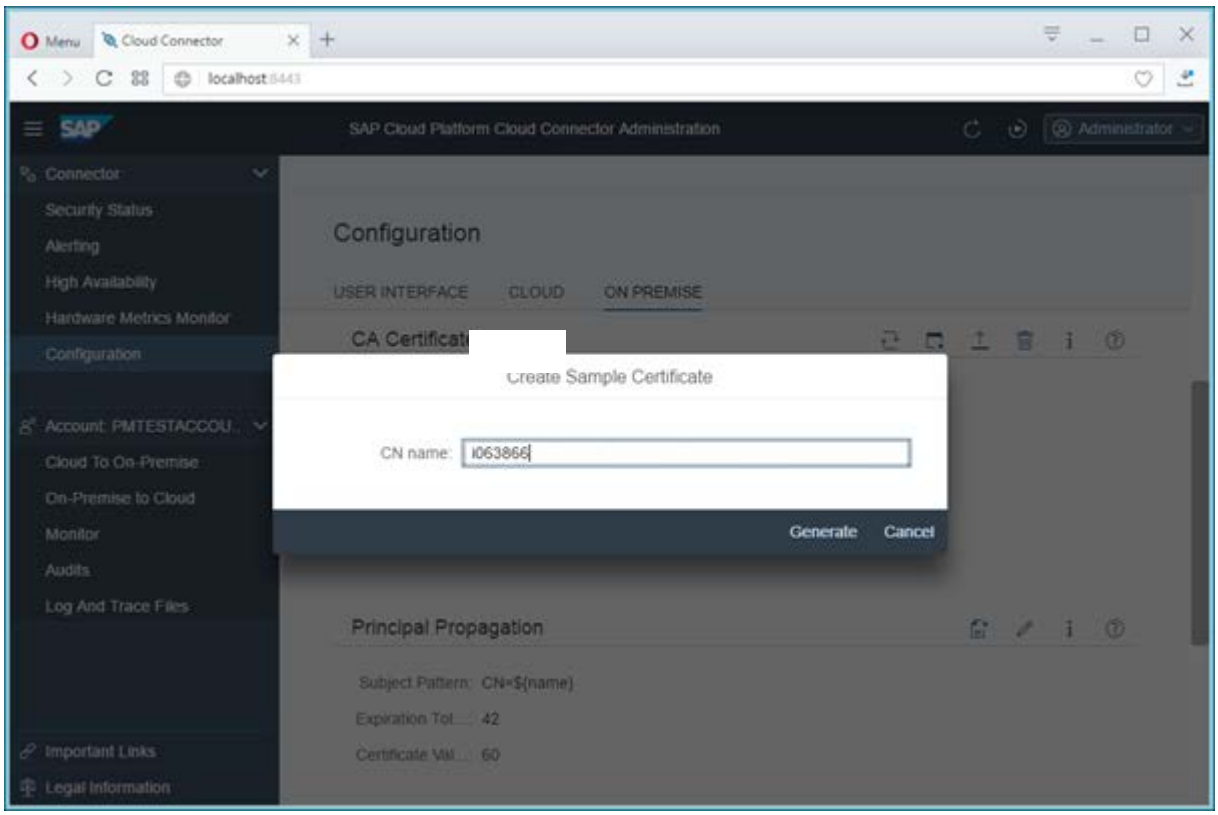


This screen describes the pieces of information that will be used to build the short-lived certificates. In the screenshot above the name is the only info that is passed.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Press Save to store the information and you should see the finished Principal Propagation configuration as shown above.



Now create dummy certificate that will be used as a reference for all the certificates that will be issued by the SCC.

Enter the client id copied from BTP subaccount key

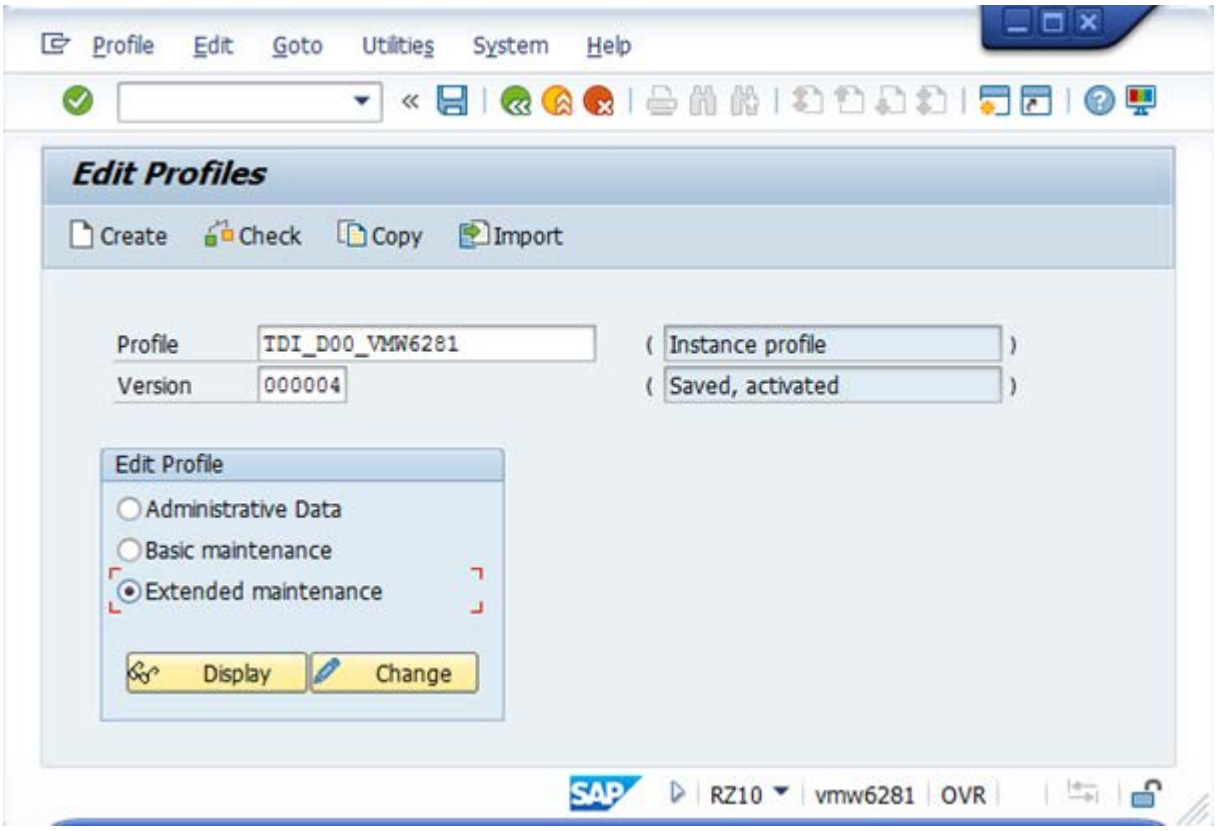
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.3.2.4 Configure the SAP Gateway

On the SAP backend, only few transactions will be required: RZ10, STRUST, CERTRULE (or EXTID_DN), SICF and SMICM.

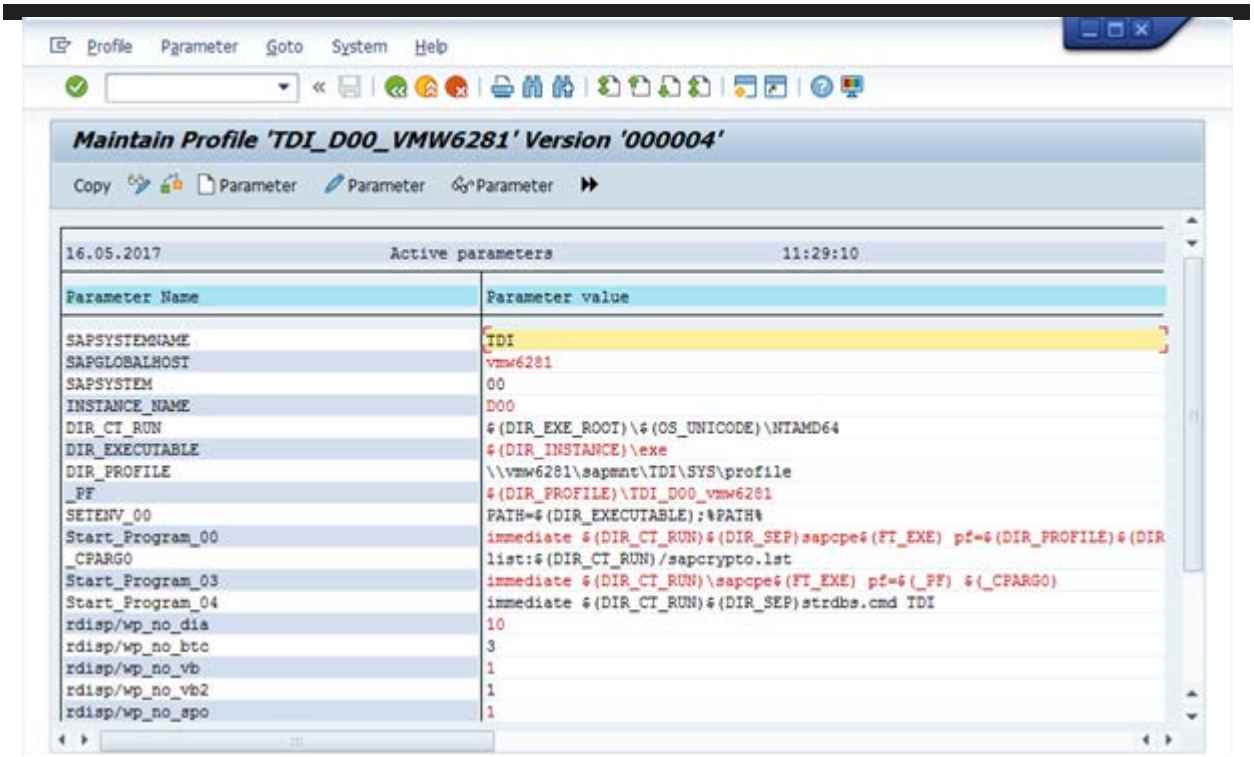
Enabling Certificate Based Login

In order to have the Gateway request a certificate rather than prompt for a username and a password, certain profile parameters need to be maintained. This configuration is done using the transaction RZ10.

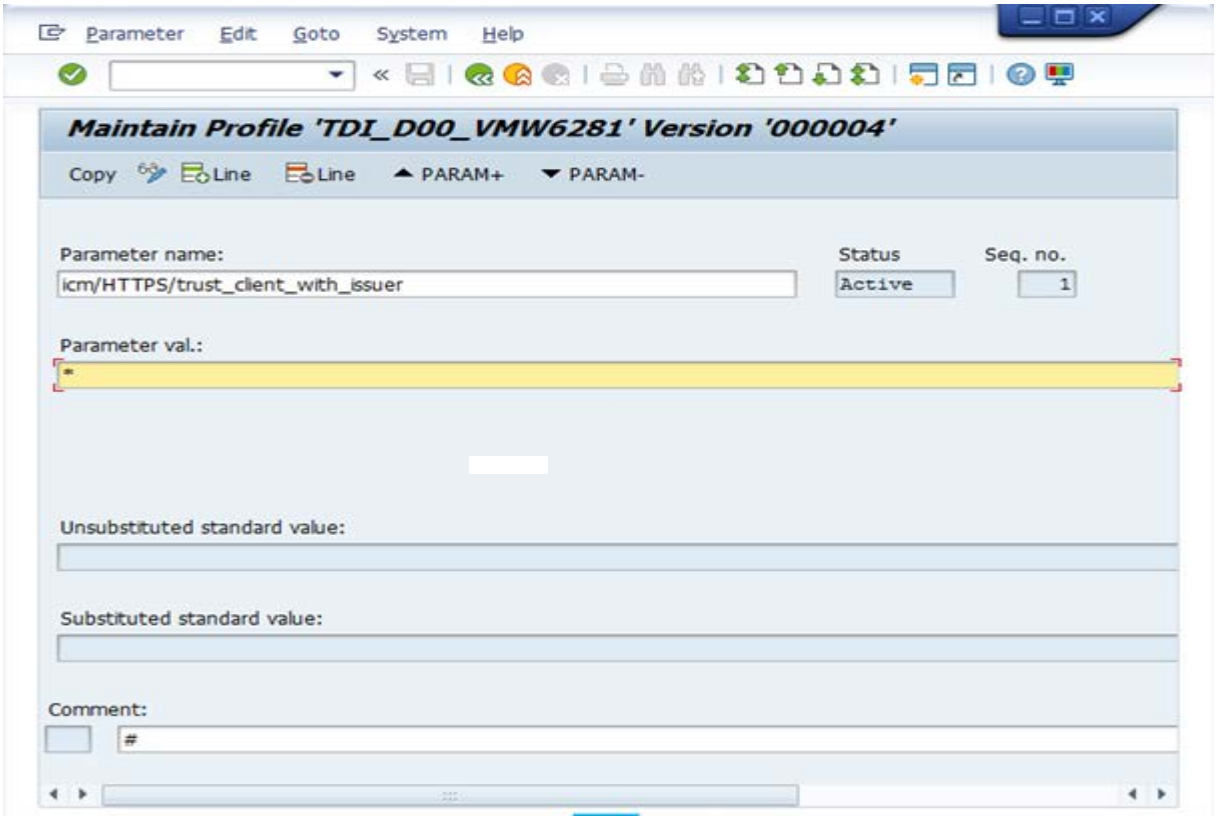


Choose the instance profile (could also be the DEFAULT profile) and mark the Extended maintenance radio button and then press the Change button.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.



Pressing the new parameter button will allow you to insert a new parameter into the profile by presenting the screen below.

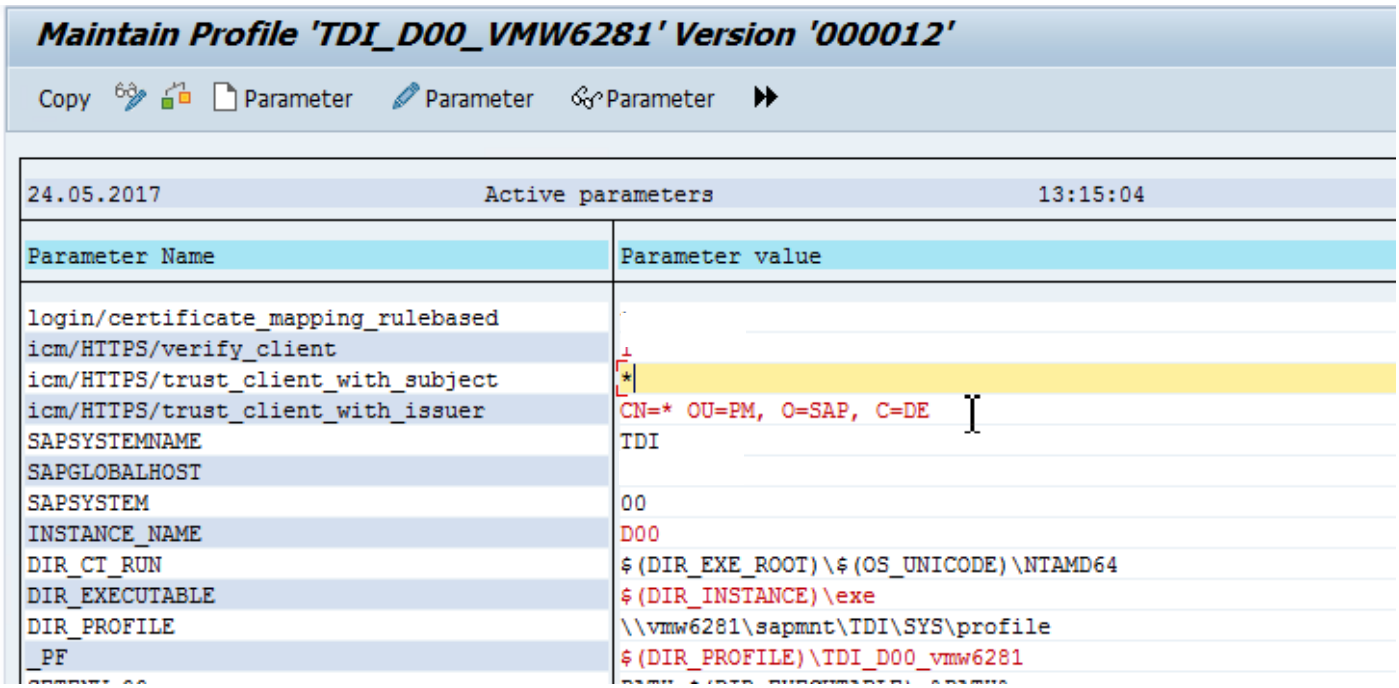


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Maintain the 4 profile parameters listed below.

login/certificate_mapping_rulebased	This parameter allows the GW to map, based on a rules defined in CERTRULE, the identity contained in an identity certificate received during the authentication with an internal user. If set to 0, this mapping need to be maintained manually through EXTID_DN.
icm/HTTPS/verify_client	This parameter instructs the GW to request a certificate from clients trying to access any resource in the GW. It is a key parameter to configure certificate base authentication on the GW.
icm/HTTPS/trust_client_with_issuer	Value corresponding to the Issuer of the SAP Cloud Connector System Certificate This parameter contributes to the establishment of a trust between the SAP Cloud Connector and the SAP Gateway System.
icm/HTTPS/trust_client_with_subject	Value corresponding to the subject of the SAP Cloud Connector System Certificate This parameter contributes to the establishment of a trust between the SAP Cloud Connector and the SAP Gateway System.

Make sure you press the Copy button for each parameter you create. The result is a profile that looks like the screenshot below.

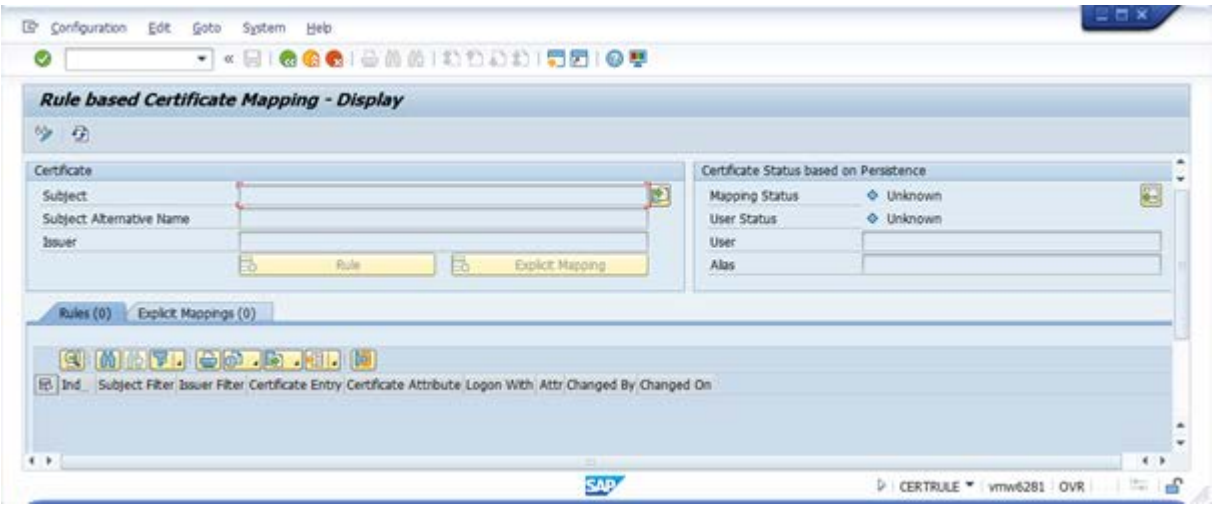


NOTE : What if a trust had to be configured with more than one system? The issuer and subject parameter we have just mentioned can only reference a single system.
In the SAP note 2052899, SAP introduce a new parameter that can be included in the profile multiple times and that replaces the actual two parameters: icm/trusted_reverse_proxy_0.

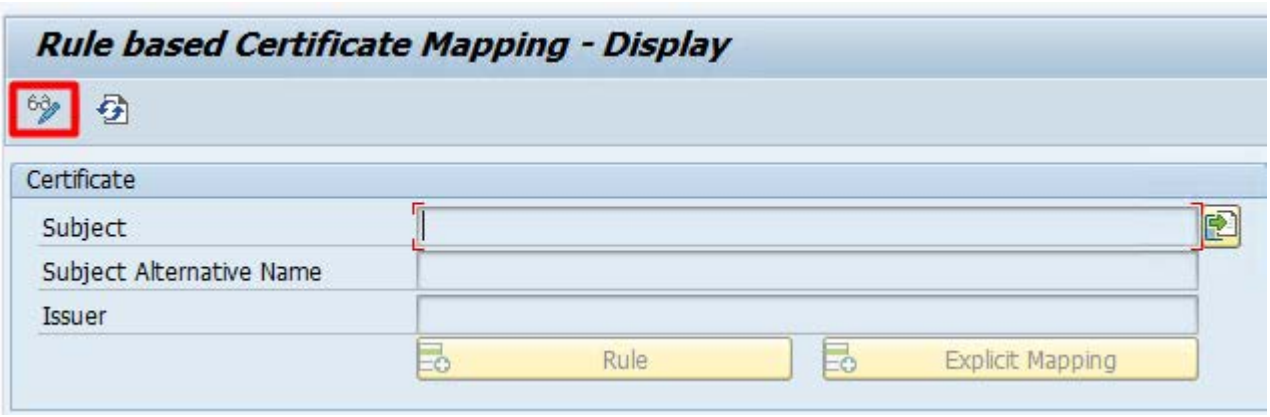
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Now that the system requests a certificate as its primary login mechanism, we need to complement this configuration by configuring a rule that helps identify the individual user being authenticated.

This is achieved using the transaction CERTRULE.



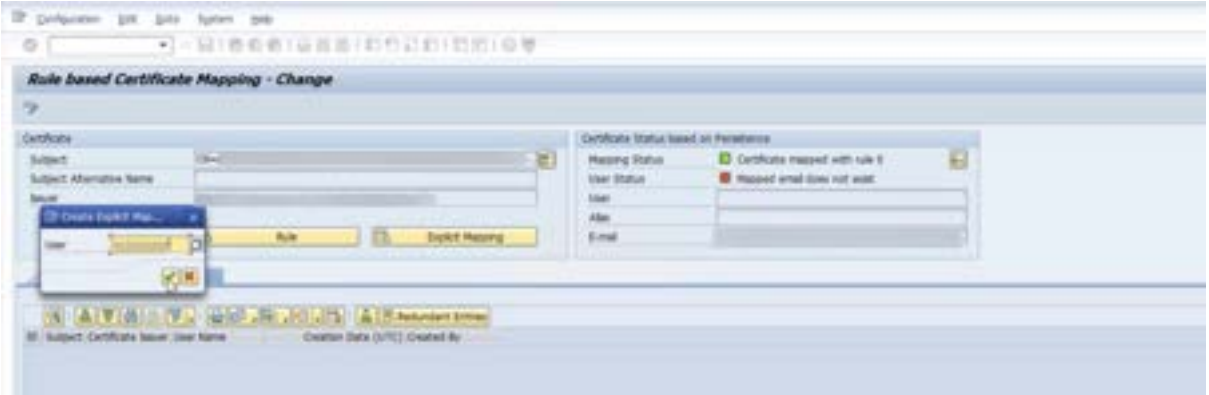
If the buttons are transparent as shown above, you will have to enter change mode by pressing the “glasses&pencil” icon.



Press the “Import Certificate” button to choose your template certificate. Here is where we will use the sample certificate generated in the Cloud Connector’s Principal propagation tab.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

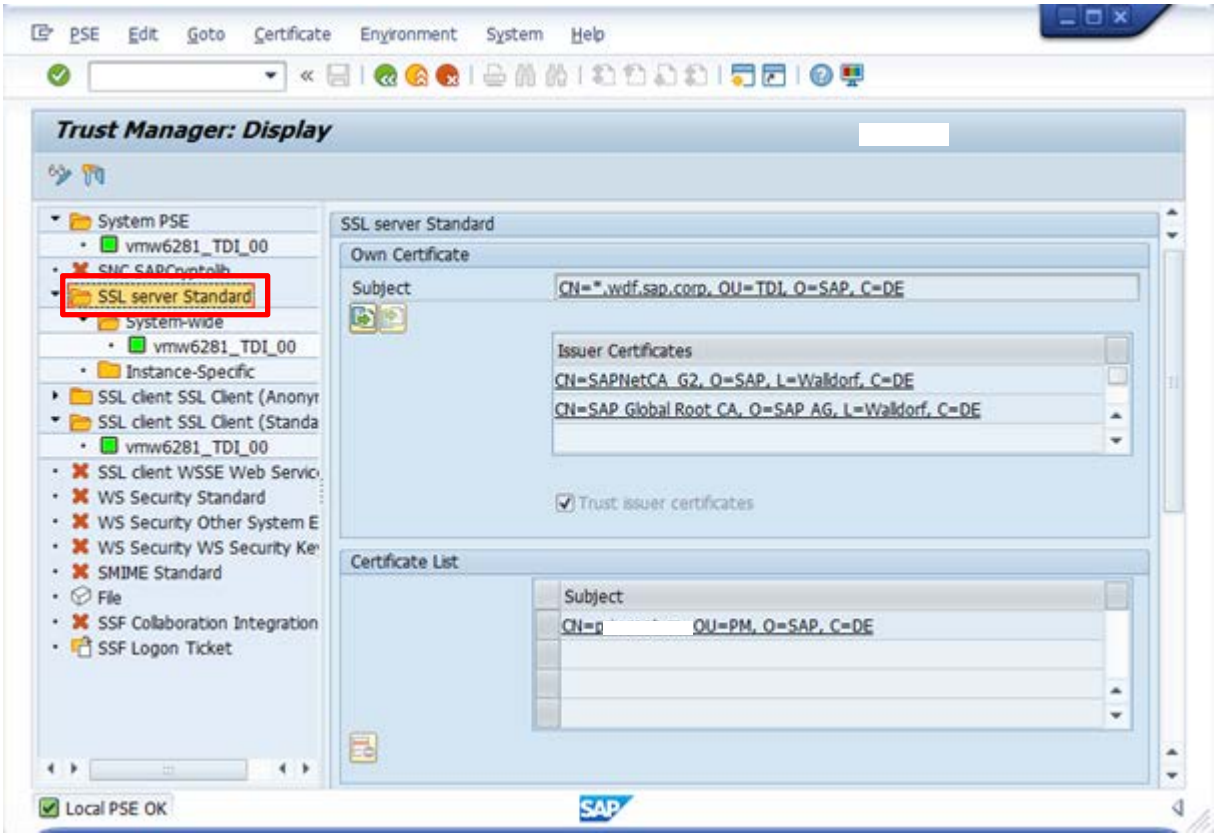
Once you have chosen the certificate to import, press the Explicit Mapping button to create a explicit mapping. Do not worry about the traffic lights in the right-hand pane. They will turn green when you save the rule, if the user exists.



Create a Dialog type user in SU01 - <USER>. Click on Explicit Mapping - and enter user as <USER>.
Press the Save icon on the top ribbon to save the rule. Notice that the traffic lights are now green.

Configuring the backend for Principal Propagation

In transaction STRUST, the issuer of the certificate we used in the previous section needs to be added to the Certificate list of the SSL server Standard.



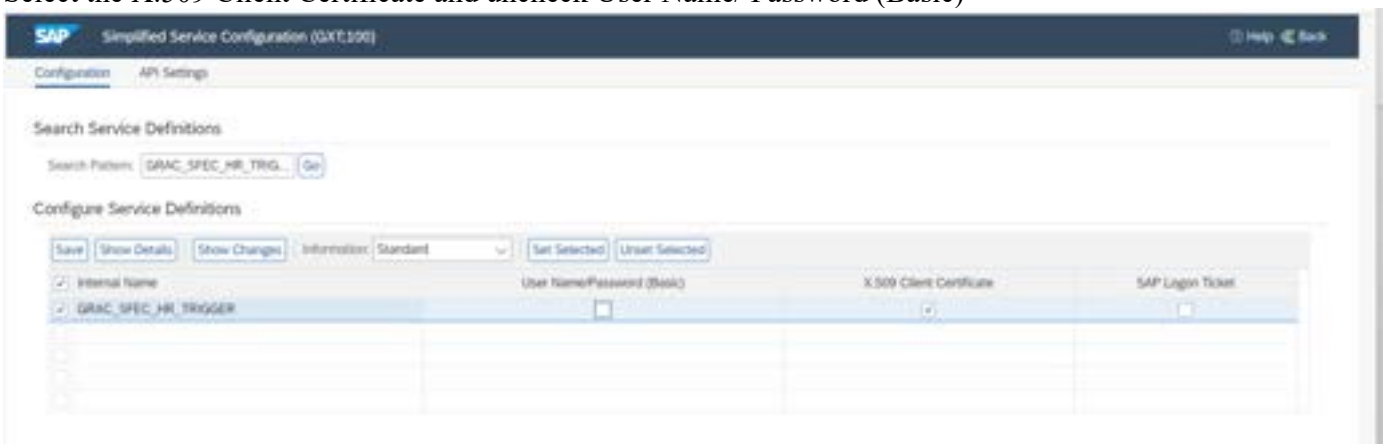
© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Configuration of SOAMANAGER

This configuration is required only in case of OAuth 2.0 Client Credentials authentication in *Principal Iflow Trigger.*

Navigate to transaction SOAMANAGER, then to Simplified Service Configuration.
Search for object GRAC_SFEC_HR_TRIGGER.

Select the X.509 Client Certificate and uncheck User Name/ Password (Basic)



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

5.4 How to get the SAP Cloud Integration Client Certificate

In the SAP Cloud Integration provisioning email, follow the link under *Certificate Information.* In the resulting screen, choose *X509 Certificate* with option *Binary CER.* Download it to your local machine.

5.5 View and Extend the Deployed iFlows using SAP Eclipse (Optional)

This step is optional and only required if you want to extend the standard iFlows. For example, if you want to add content and field mapping beyond what is delivered.

Prerequisites

1. Install the SAP Cloud Integration Eclipse environment. For more information, see *https://tools.hana.ondemand.com/#hc*.
2. Maintain the SAP Cloud Integration Operation server details at *Windows* ➔ *Preferences* ➔ *SAP Cloud Integration* ➔ *Operation server* (see provisioning email for details).
3. Configure and deploy prepackaged content using SAP Cloud Integration web UI. For more information, see the section *Configure and Deploy iFlows using SAP Cloud Integration Web UI.*

5.5.1 Download the iFlow Projects on Your Desktop

1. Go to Integration Designer perspective.
2. In the *Project Explorer,* on the Eclipse toolbar, navigate to *File* ➔ *Import.*
3. In the Import wizard, select the option Integration Content Archive und in the former SAP HANA Cloud Integration and click Next.
4. In the next screen under *Import,* select *Tenant Management Node* in the *Form location* dropdown and select your tenant in the *Tenant ID* dropdown box.
5. From the Integration content section, select the iFlow that you want to download and click *Finish.*
6. The project is imported and displayed under the Project Explorer

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5.5.2 View the configured certificates and externalized parameters

1. In the Project Explorer, expand the tree view and double click to open the iFlow found under *scr.main.resources.scenarioflows.integrationflows.*
2. In the Integration Designer, select the iFlow.
3. Within the iFlow, select the sender system under the *Properties* tab.
4. If you wish to update the authentication of the iFlow to *Basic Authentication,* select the mode of authentication as *Basic Authentication.*
5. For certificate based authentication, view the details un the *Properties* tab.
6. To view the configuration of the iFlow, click on the *Externalized Parameters* tab, under the *Value* field, and view the configured <host>:<port> information of the receiver system.

5.5.3 Extend the project in Eclipse and Deploy

1. To extend the iFlow project, you can make modifications to any of the three folders:
    a. Scr.main.resources.mapping
    b. Scr.main.resources.scenarioiflows.integrationflow
    c. Scr.main.resources.wsdl
2. Deploy the modified iFlow project by using the right click option at the iFlow project level and selecting *Deploy Integration Content.*
3. Enter the *Tenant ID* and click *OK.*

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

6 Monitor Phase: Monitor Messages Across Systems

Messages are exchanged between the SAP Access Control, SAP Cloud Integration, and SAP SuccessFactors systems, during data load and go-live phases. These messages need to be monitored to:

- Identify incorrect data in messages
- Identify the component where the message has failed
- Check connectivity issues between the components

6.1 Initial Load

Initial load triggers an initial transfer of all employee records from Employee Central to SAP Access Control. You specify a start date to select the employee records to be processed.

6.2 Delta Load

Delta load applies to customers who are using SAP Access Control in a production environment and are newly integrating with SAP SuccessFactors. When you execute the data transfer process, the system records the timestamp of the run. The system uses this timestamp to select the employee changes for the next integration run. Only changes that are newer than the recorded timestamp are included in the next integration run.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

6.3 Field Mapping in SAP Cloud Integration

The tables below list the field mapping between the OData API structure from Employee Central and the Web service structure from SAP Access Control.

This table shows the delivered field mapping used by SAP Cloud Integration.

> **Note**
>
> If you add custom fields, you must also modify the SAP Cloud Integration process. For more information, see SAP SuccessFactors Employee Central Configuration.

Employee Details

OData API Structure Node	OData API Structure Attribute	Web Service Node	Web Service Attribute
person	person_id_external	UserChangeDetails.item	Userid
person.personal_information	first_name	UserChangeDetails.item	Fname
person.personal_information	last_name	UserChangeDetails.item	Lname
person.email_information	email_address	UserChangeDetails.item	Email
person.phone_information	phone_number	UserChangeDetails.item	Telnumber
person.employment_information	end_date	UserChangeDetails.item	ValidTo
person.employment_information.job_information	Company	UserChangeDetails.item	Company
person.employment_information.job_information	Department	UserChangeDetails.item	Department

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

person.employment_information.job_information	job_code	UserChangeDetails.item	Empjob
person.employment_information.job_information	manager_id	UserChangeDetails.item	Manager
person.employment_information.job_information	Position	UserChangeDetails.item	Empposition
person.employment_information.job_information	cost_center	UserChangeDetails.item	Costcenter
person.employment_information.job_information	start_date	UserChangeDetails.item	ValidFrom
person	person_id_external	UserChangeDetails.item.UserChange.item	USERID
person.employment_information	end_date	UserChangeDetails.item.UserChange.item	VALID_TO
person.employment_information.job_information	action	UserChangeDetails.item.UserChange.item	
person.employment_information.job_information	business_unit	UserChangeDetails.item.UserChange.item	BUSINESS_AREA
person.employment_information.job_information	company	UserChangeDetails.item.UserChange.item	COMPANY
person.employment_information.job_information	company_territory_code	UserChangeDetails.item.UserChange.item	COMPANY_TERRITORY_CODE
person.employment_information.job_information	department	UserChangeDetails.item.UserChange.item	DEPARTMENT
person.employment_information.job_information	division	UserChangeDetails.item.UserChange.item	PERSONNELAREA

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

person.employment_information.job_information	emplStatus	UserChangeDetails.item.UserChange.item	EMPLSTATUS
person.employment_information.job_information	event	UserChangeDetails.item.UserChange.item	EVENT
person.employment_information.job_information	job_code	UserChangeDetails.item.UserChange.item	EMPJOB
person.employment_information.job_information	manager_id	UserChangeDetails.item.UserChange.item	Manager
person.employment_information.job_information	position	UserChangeDetails.item.UserChange.item	EMPPOSITION
person.employment_information.job_information	start_date	UserChangeDetails.item.UserChange.item	VALID_FROM

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Employee Change Details

OData API Structure Node	OData API Structure Attribute	Web Service Node	Web Service Attribute
person	person_id_external	UserChangeDetails.item.UserChange.item	USERID
person.employment_information	end_date	UserChangeDetails.item.UserChange.item	VALID_TO
person.employment_information.job_information	action	UserChangeDetails.item.UserChange.item	
person.employment_information.job_information	business_unit	UserChangeDetails.item.UserChange.item	BUSINESS_AREA
person.employment_information.job_information	company	UserChangeDetails.item.UserChange.item	COMPANY
person.employment_information.job_information	company_territory_code	UserChangeDetails.item.UserChange.item	COMPANY_TERRITORY_CODE
person.employment_information.job_information	department	UserChangeDetails.item.UserChange.item	DEPARTMENT
person.employment_information.job_information	division	UserChangeDetails.item.UserChange.item	PERSONNELAREA
person.employment_information.job_information	emplStatus	UserChangeDetails.item.UserChange.item	EMPLSTATUS
person.employment_information.job_information	event	UserChangeDetails.item.UserChange.item	EVENT
person.employment_information.job_information	job_code	UserChangeDetails.item.UserChange.item	EMPJOB

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

person.employment_information.job_information	manager_id	UserChangeDetails.item.UserChange.item	Manager
person.employment_information.job_information	position	UserChangeDetails.item.UserChange.item	EMPPOSITION
person.employment_information.job_information	start_date	UserChangeDetails.item.UserChange.item	VALID_FROM

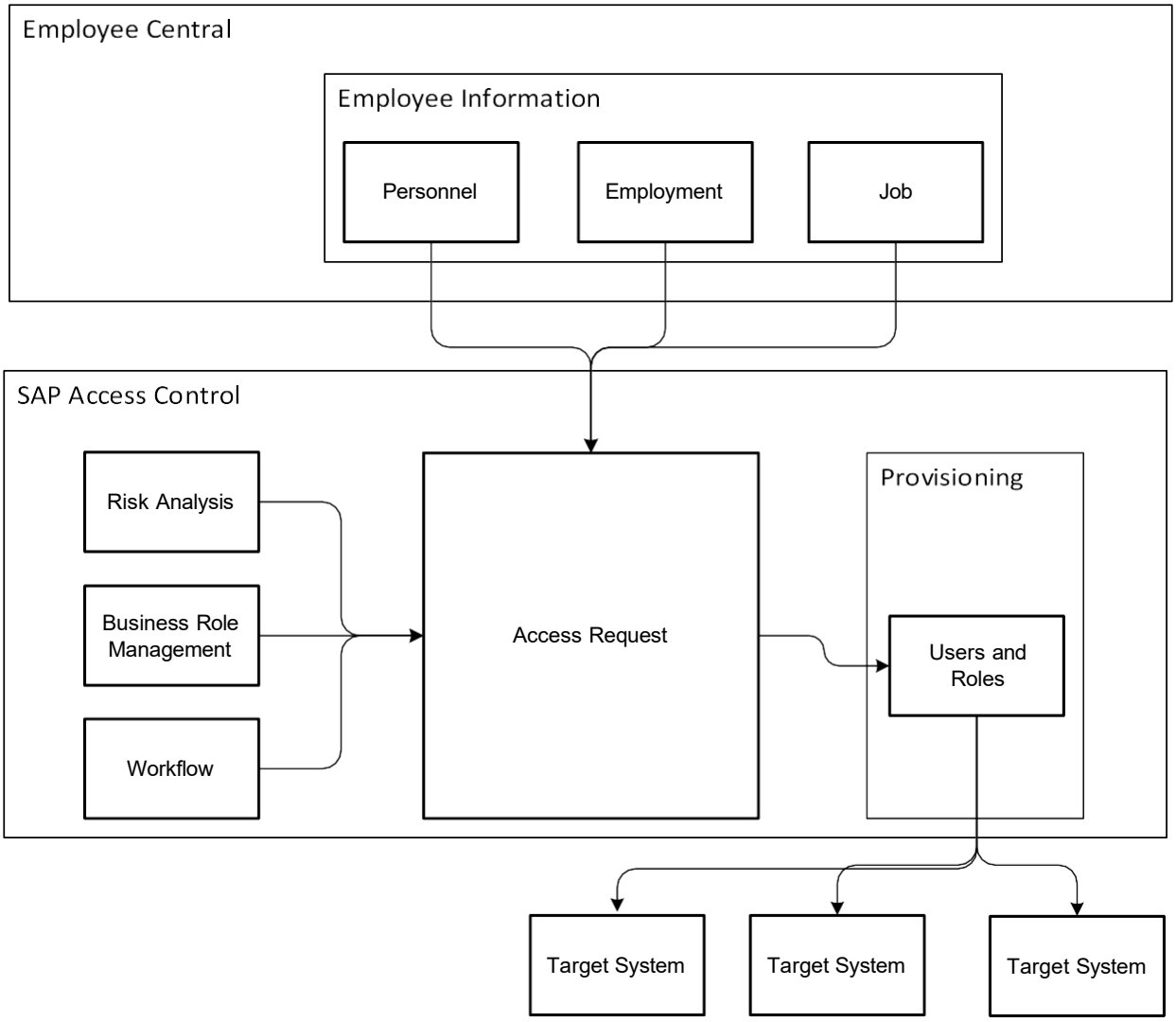
Custom Fields

OData API Structure Node	OData API Structure Attribute	Web Service Node	Web Service Attribute
Structure Node	Attribute	UserChangeDetails.item.CustomFields.item	SAP ACCESS CONTROL Custom Field Name

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

7. Data Integration Concepts

SAP SuccessFactors Employee Central is your master system. Changes to employee data in Employee Central are transferred to SAP Access Control using SAP Cloud Integration. This integration process is illustrated below:



Note

An integration package is delivered for SAP Cloud Integration that contains the iFlow covering the entire integration scenario. After you deploy and configure the iFlow, the scenario is ready to run.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

7.1 Transferring Employee Change Data

SAP Cloud Integration triggers employee data transfer from Employee Central using the scheduled SAP Cloud Integration process.

Below is an example of an employee's job information in Employee Central. This employee has a position, a business unit, a cost center, a manager, and a job classification assignment.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

7.2 Staging Tables

Once SAP Access Control receives the employee change data, it is stored in staging tables. If needed, you can use these staging tables for troubleshooting the integration process. The following are the staging tables:

Staging Table Name	Description
GRACSFECTRGUSER	Employee Details
GRACSFECUSRCHNG	Employee Change Information
GRACSFECUSERCF	Employee Custom Fields

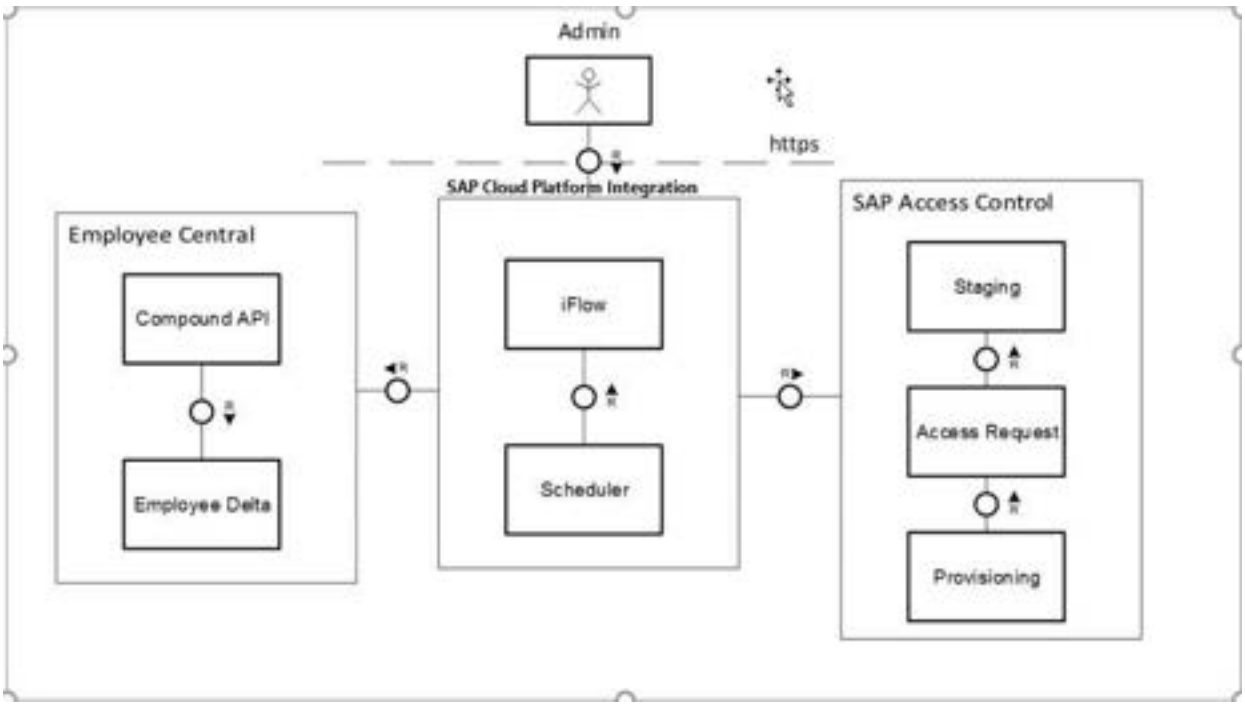
Table GRACSFECTRGUSER contains a processing status for each record. The possible statuses are listed in the table below.

Processing Status	Meaning
OPEN	Record is not yet processed
PROCESSED	Request successfully created
FAILED	Request was not created due to errors

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

7.3 OData Services and SOAP Messages

The transfer process is always triggered from SAP Cloud Integration, either manually by an administrator, or automatically by a scheduled, periodic process. SAP Cloud Integration calls an OData service that extracts data according to filter values. The employee data is then transferred to SAP Access Control as a SOAP message. Once data arrives in SAP Access Control, Access Control takes actions based on BRF+ rules. An access request is created with the correct authorizations.

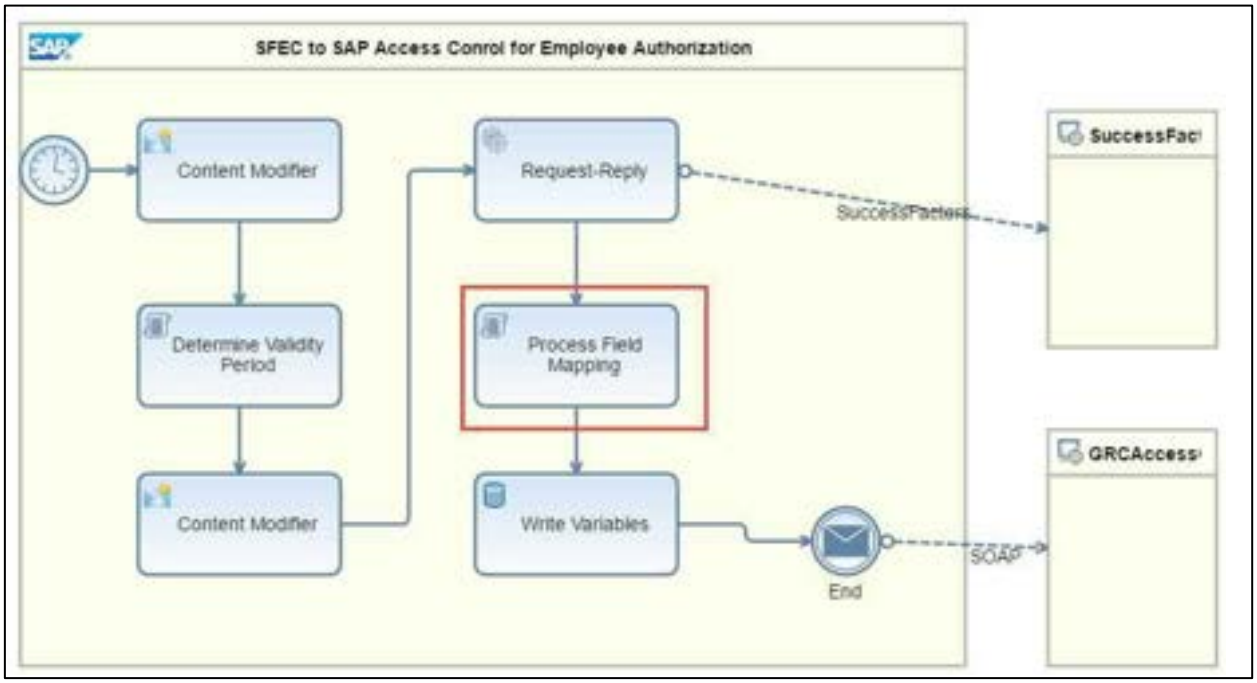


© 2017 SAP SE or an SAP affiliate company. All rights reserved.

The following OData services and SOAP messages are used in the data transfer process:

Source/Destination	OData/SOAP Service	SOAP Message
Employee Central	CompoundEmployee	11508 XML SFOData.EmployeeHRTrigger Element QUERY Response
SAP Access Control	GRAC_SFEC_HR_TRIGGER	1508 XML Web Services SOAP Client SAP AC Employee HR Trigger Request_In EXECUTE Request

7.4 Extending the Data Transfer Process



If you want to extend the data transfer process, you can create a custom (or country-specific) field in Employee Central. In SAP Access control, you create corresponding custom fields and map the fields to the corresponding Employee Central field.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

8 Monitoring the Integration Process

This section describes the tools that are available for monitoring the transfer of employee data from SAP SuccessFactors Employee Central to SAP Access Control. The table below shows an overview of the monitoring tools that are described in more detail in the following sections.

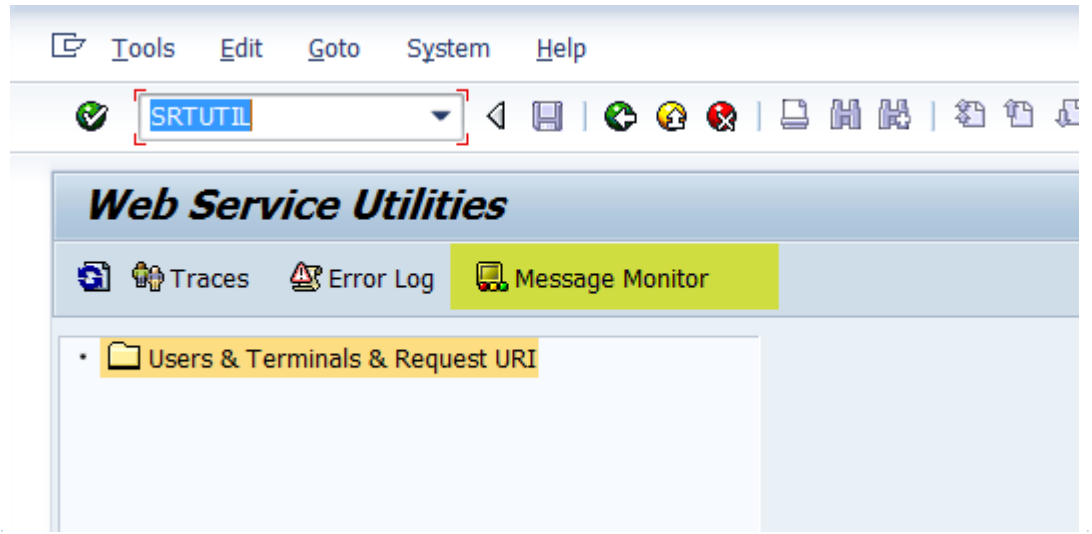
Integration Monitoring Tools

System	Monitoring tool	Where can I find it?	What is it used for?
SAP Access Control	Web Service Utilities offers an *Error Log* and a *Message Monitor* tool.	Transaction *SRTUTIL* (Web Service Utilities) or *SXMB_MONI* (Integration Engine: monitoring)	Monitor incoming SOAP messages
SAP Access Control	Application Log	Transaction *SLG1*	Monitor creation of inbound messages and storage of replication requests in the staging area
Employee Central	SFAPI Audit Log	*Administration Tools* ➔ *Company Processes & Cycles* *Company Settings* ➔ *SFAPI* ➔ *Audit Log*	Monitor Compound Employee API calls for employee assignment data
SAP Cloud Integration	Process Reporting	*Operations view* ➔ *Monitor Message Processing* ➔ *Integration Flow tile* ➔*Select the artifact name* ➔ *Check the status details and logs*	Monitor the message processing in SAP Cloud Integration CI Web UI.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

8.1 SAP Web Service Utilities

To access the SAP Web Service Utilities, in the SAP system, go to transaction *SRTUTIL*.



Recommendation

For more information about the tool, see *Web Service Logging and Tracing* in the ABAP Web Services documentation (search for *web service logging and tracing* in the SAP Help Portal at http://help.sap.com/netweaver).

Note

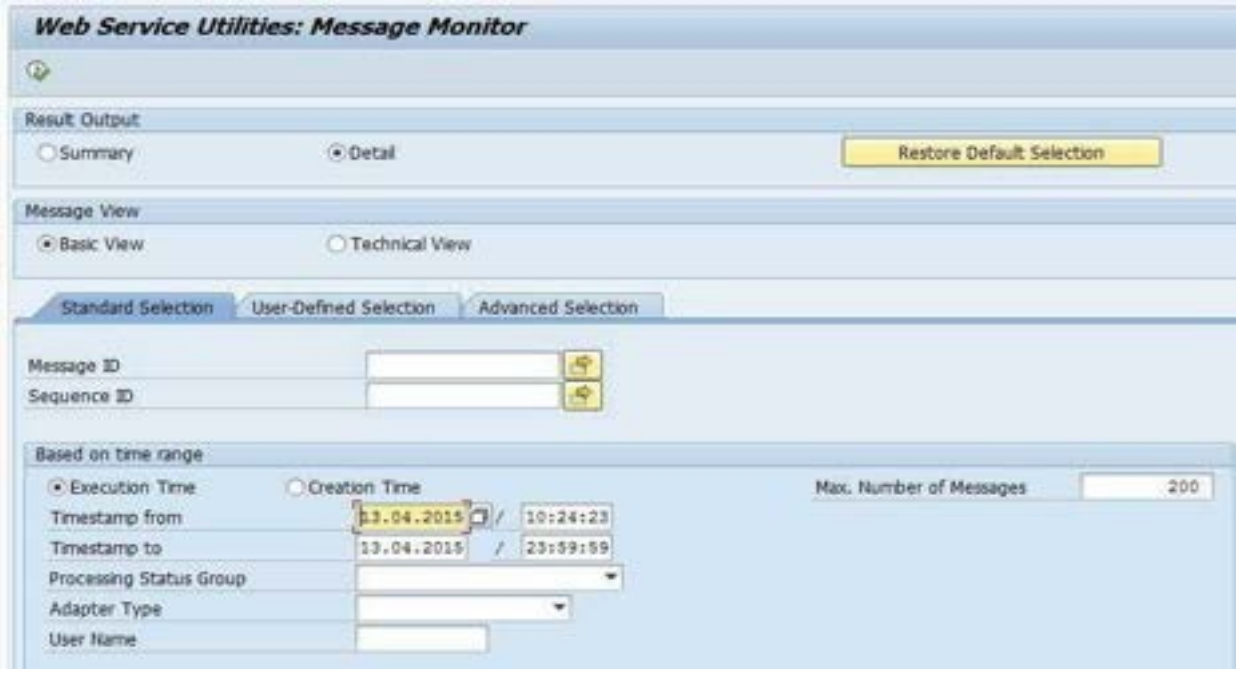
Depending on your system configuration, transaction `SRTUTIL` might not be available. If the transaction is not available, use transaction *SXMB_MONI - Integration Engine: Monitoring*.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

8.1.1 SAP Message Monitor

The *Message Monitor* shows you an overview of all received messages along with their content. You can select the message, for example, by specifying the execution time.

Use transaction *SRTUTIL* to access the Message Monitor. Click the *Message Monitor* icon to access the screen below.



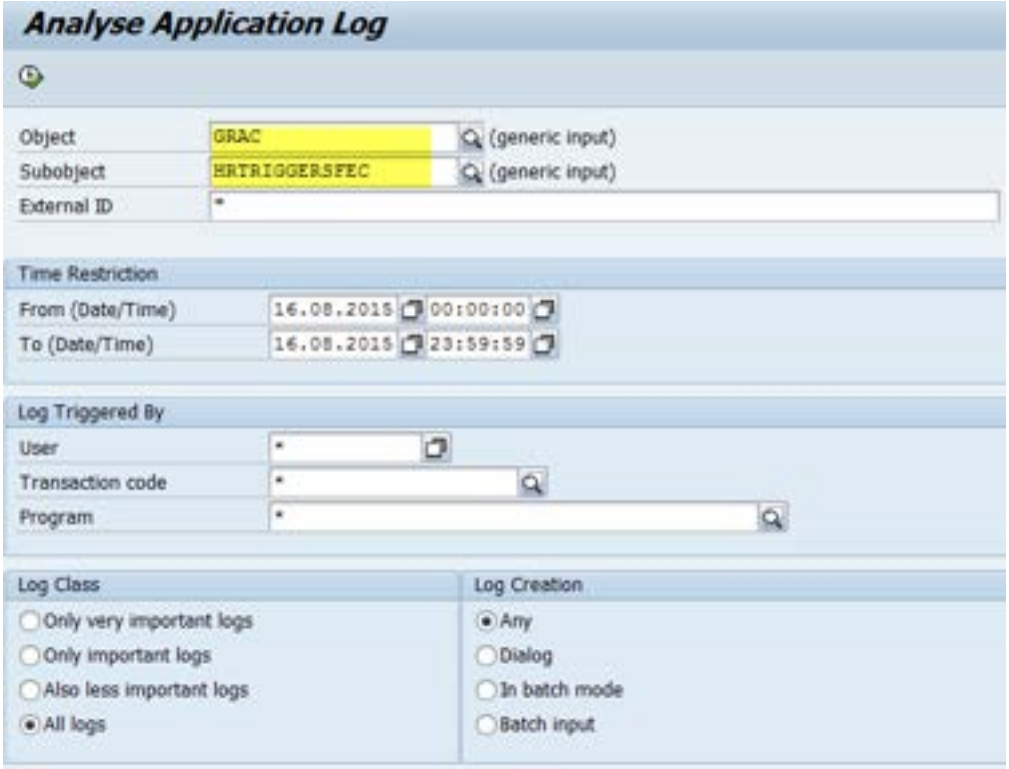
© 2017 SAP SE or an SAP affiliate company. All rights reserved.

8.2 SAP Application Log

The system creates an application log when the employee change data are processed and stored as access requests in the staging area, as well as when the entries in the staging area are processed.

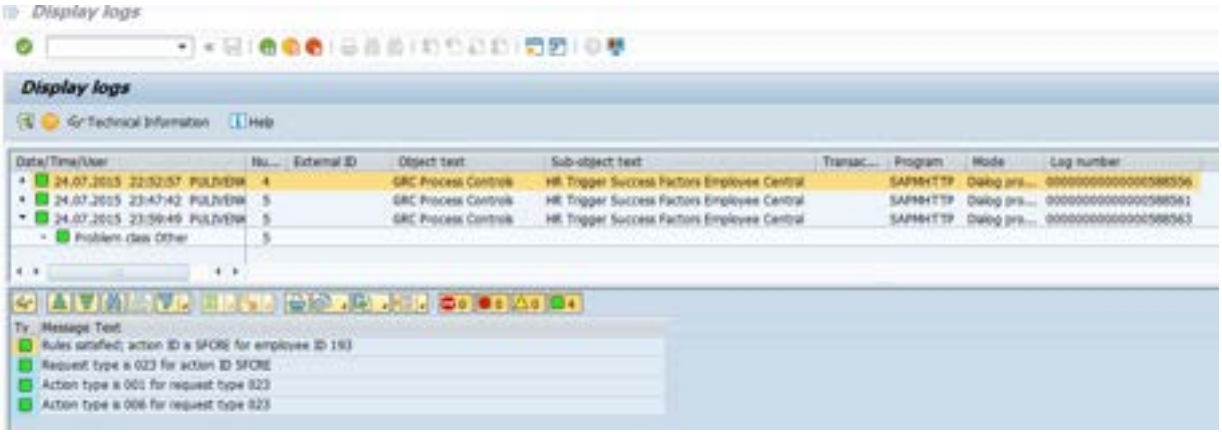
Procedure

1. Go to transaction Analyze Application Log (SLG1)
2. Enter the object GRAC
3. Enter the sub object HRTRIGGERSFEC.
4. Click *Execute*.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

5. The application log displays.
    a. Status indicator
    b. Message texts apply to the row selected above. Click the row to display all related messages.
    c. Each row represents one run of the interface



© 2017 SAP SE or an SAP affiliate company. All rights reserved.

8.3 Employee Central SFAPI Audit Log

The audit log for the Compound Employee API from Employee Central contains Employee Central data.

> **Note**
>
> The SFAPI Audit Log is intended to help with support and debugging of API usage. You can use it, for example, to share information with SAP support to help resolve API related support issues. The tool allows you to download data from individual calls, which you can send to an SAP support representative.

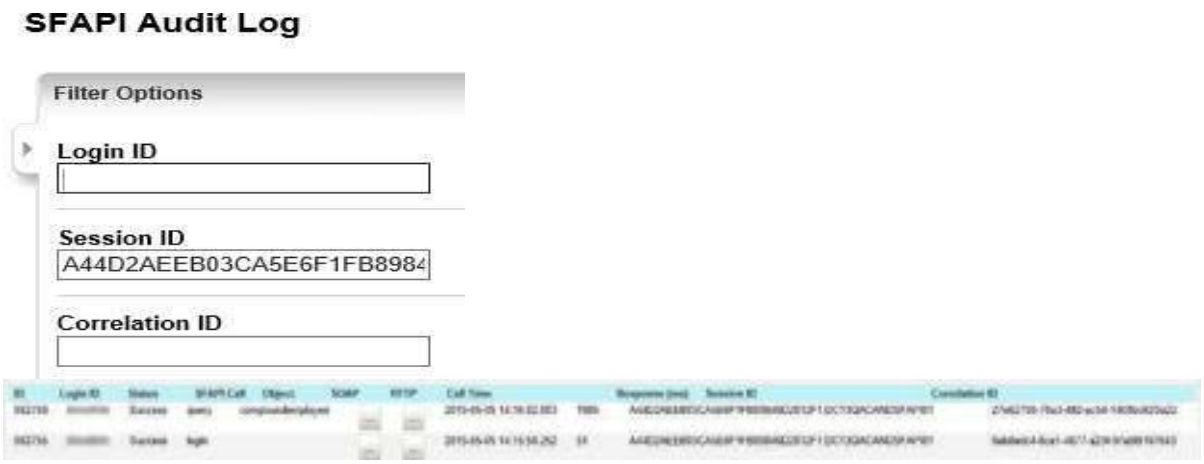
Procedure

1. To access the SFAPI Audit Log, go to Employee Central and choose *Administration Tools*.
2. In the Tool Search, enter *SFAPI*.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

3. The system displays the Audit Log.

4. The Audit Log shows the last 10,000 API calls to the system. For each call, you can view the details by selecting the button under the *SOAP* or *HTTP* columns in the log table.
5. You can use the *Session ID* from SAP Cloud Integration to find a specific API call in the SFAPI Audit Log



Note

For more information about the SFAPI Audit Log, refer to the *HCM Suite SFAPI* programmer's guide at http://help.sap.com/ cloud4hr, under *APIs*.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

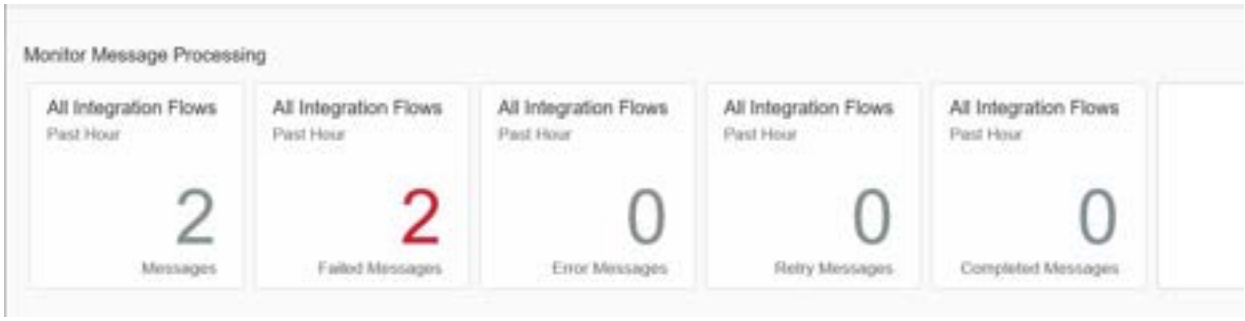
8.4 Process Reporting in SAP Cloud Integration

To monitor the process execution in SAP Cloud Integration, sign on to SAP Cloud Integration.

Procedure

1. From the SAP Cloud Integration Web UI (*https://cd2grc1-tmn.hci.int.sap.hana.ondemand.com/itspaces/#/shell/discover*), choose the *Operations* view

2. Under Monitor Message Processing, choose the appropriate Integration Flow tile.



© 2019 SAP SE or an SAP affiliate company. All rights reserved.

3. In the left navigation pane, select the artifact name.

4. In the right pane, the system displays the *Status Details* and *Logs* within the specified timeframe on the messages in which your processes are deployed.

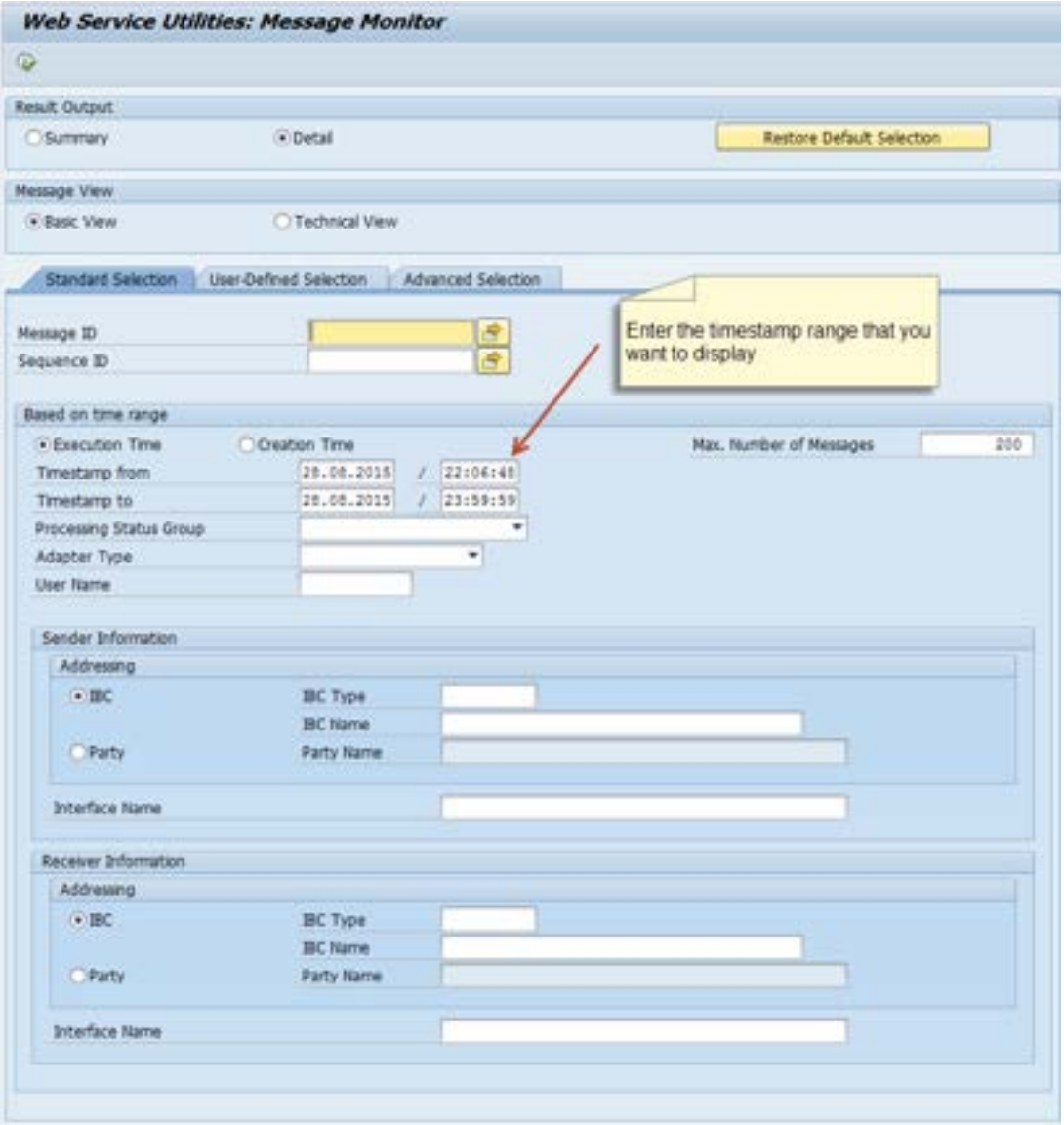
8.4.3 Messages in SAP Web Service Utilities

You can use the *Timestamp* from SAP Cloud Integration to filter for a specific entry in the message monitor of the *Web Service Utilities* tool in the SAP *system.*

Procedure

1. In the SAP Access Control system, go to transaction *SRTUTIL*.
2. Click Message Monitor
3. Enter the *Timestamp* range.
4. Click Execute.

© 2017 SAP SE or an SAP affiliate company. All rights reserved.



5. On the result screen, click the outgoing connection.
6. Click *View Document* to see the details.

© 2019 SAP SE or an SAP affiliate company. All rights reserved.

Document Change History

Release	Version	Date	Description
Q1 2026	2.0	Mar, 2026	Updated version

© 2017 SAP SE or an SAP affiliate company. All rights reserved.

Important Disclaimers and Legal Information

Coding Samples

Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, unless damages were caused by SAP intentionally or by SAP's gross negligence.

Accessibility

The information contained in the SAP documentation represents SAP's current view of accessibility criteria as of the date of publication; it is in no way intended to be a binding guideline on how to ensure accessibility of software products. SAP in particular disclaims any liability in relation to this document. This disclaimer, however, does not apply in cases of wilful misconduct or gross negligence of SAP. Furthermore, this document does not result in any direct or indirect contractual obligations of SAP.

Gender-Neutral Language

As far as possible, SAP documentation is gender neutral. Depending on the context, the reader is addressed directly with "you", or a gender-neutral noun (such as "sales person" or "working days") is used. If when referring to members of both sexes, however, the third-person singular cannot be avoided or a gender-neutral noun does not exist, SAP reserves the right to use the masculine form of the noun and pronoun. This is to ensure that the documentation remains comprehensible.

Internet Hyperlinks

The SAP documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. SAP does not warrant the availability and correctness of this related information or the ability of this information to serve a particular purpose. SAP shall not be liable for any damages caused by the use of related information unless damages have been caused by SAP's gross negligence or willful misconduct. All links are categorized for transparency (see: http://help.sap.com/disclaimer).

www.sap.com/contactsa p

© 2017 SAP SE or an SAP affiliate company. All rights reserved.
No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company. The information contained herein may be changed without prior notice.
Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.
These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.
SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.
Please see http://www.sap.com/corporate-en/legal/copyright/index.epx for additional trademark information and notices.