Non-Profit Organizations : Employee Details reporting to UN Pension Fund authority (UNJSPF)

SAP Cloud Integration Configuration Document

Integration Package Version 1

Version	Date	Comment
1.0.0	29.07.2021	Initial release. Contains 2 artifacts to transmit and receive response of HR Master data from Pension Fund authority - UNJSPF

THE BEST RUN SAP®

Table of Contents

1 OVERVIEW

In Non-Profit Organizations, information about employees (staff members) must be sent to UN Pension Fund authority – UNJSPF. This information needs to be submitted directly from the SAP HR system to UNJSPF web service. The communication part of this process is taken care of by SAP Cloud Integration.

There are multiple types of files that can be sent to UN Pension Fund authority – UNJSPF and each of these has their own 'integration flows' created in SAP Cloud Integration. The SAP R/3 system initiates the calls to UNJSPF web service, by sending a Request message (*TransmitStaffMemberData* or *GetReports*) to the UNJSPF web service through SAP Cloud Integration. It in turn receives a Response message from the UNJSPF web service.

In order to set up SAP Cloud Integration for these processes, there are some required configuration steps in both the SAP HR system and the SAP Cloud Integration tenant. This document details that configuration. These steps are typically taken care by an SAP Cloud Integration consultant or SAP Basis person who is responsible for configuring the SAP ERP - SAP Cloud Integration connection and maintaining the integration content and certificates/credentials on the SAP Cloud Integration tenant.

2 TECHNICAL SOLUTION IN MORE DETAIL

In order to facilitate the electronic submission of data, UNJSPF have established a SOAP based web service referred to as the UNJSPF web service and have defined specifications for how software providers can communicate with the web service in a secure manner. It has an interface described in a machine-processable format (specifically Web Services Description Language WSDL). Data is submitted in XML format.

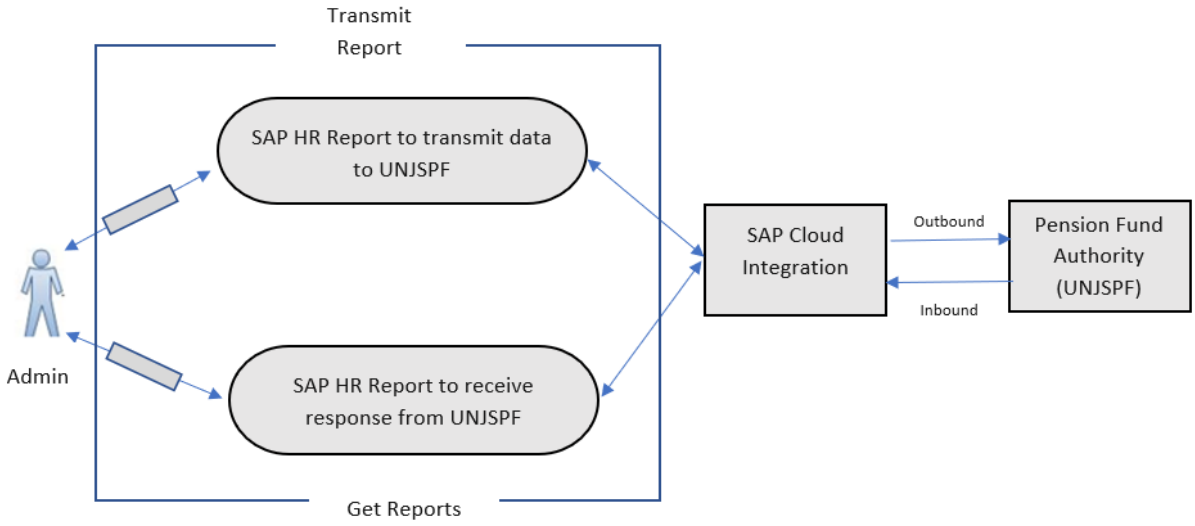
2.1 SAP Cloud Integration (SCI)

In SAP's case the communication between the HR system and UNJSPF web service is managed by SAP Cloud Integration (SCI).

2.2 Process Overview

The UNJSPF web service is connected to SAP Cloud Integration Integration (SCI) tenant assigned to an UN Organization. The terms "inbound" and "outbound" reflect the perspective of SAP HR systems:

- Outbound refers to message processing from SAP HR system to the UNJSPF.
- Inbound refers to message processing from the UNJSPF to SAP HR system.



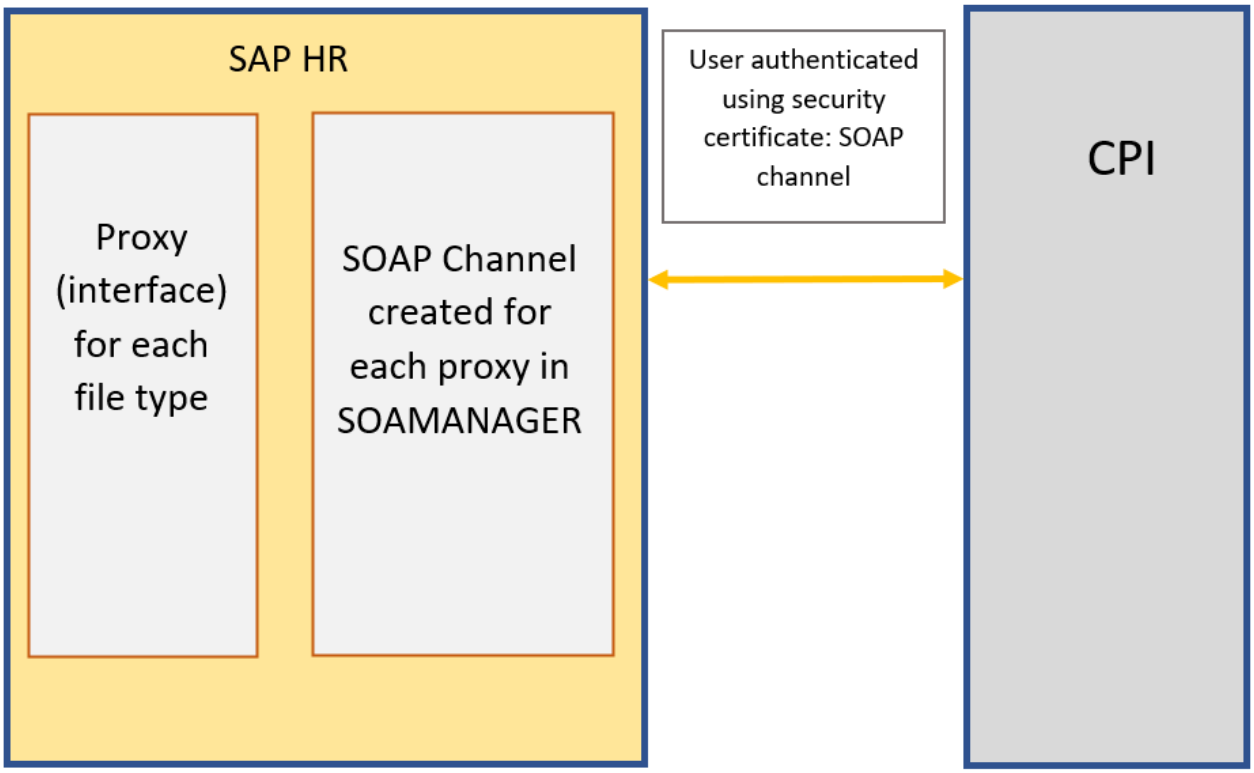
➔ **Submitting Data**

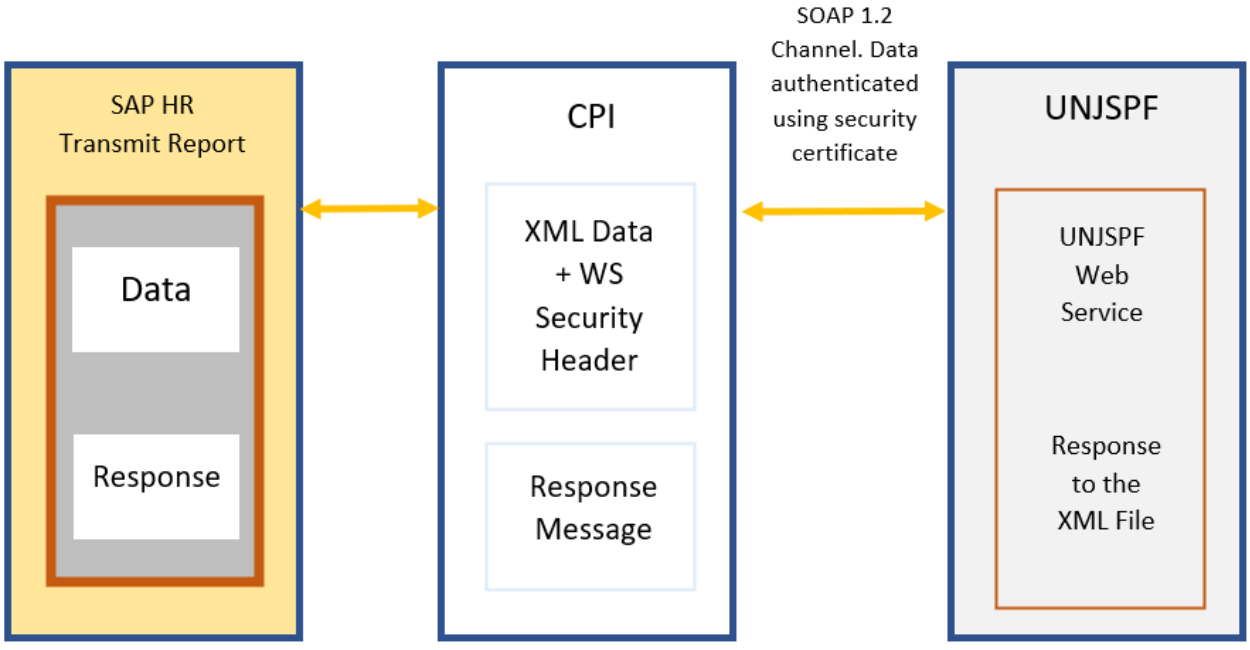
To submit data:

- A user runs HR Transmit report to extract relevant data of an employee (staff member) by providing required selection criteria.
- User sends the selected data to SAP Cloud Integration using 'Submit Data to UNJSPF' button where the XML pay load is formed according to the Pension Fund authority requirements.
- SAP Cloud Integration sends the data to Pension fund authority - UNJSPF.
- Pension fund authority - UNJSPF sends a response to SAP Cloud Integration. This shows whether the file was successfully processed or what type of error has occurred.
- SAP Cloud Integration modifies that response into an understandable format for the SAP HR system and the user is able to view the result as response.

When the data is sent from the SAP HR system to SAP Cloud Integration, it is done through the SOAP channel created in SOAMANAGER. Each SOAP channel refers to the corresponding proxy (interfaces) created in SPROXY. The proxies also have the response structures included and wait for the response to come from SAP Cloud Integration after the data is sent.

The communication channel from SAP Cloud Integration to UN Pension Fund Authority (UNJSPF) (and the return response) is SOAP 1.2 which is configured as the receiver channel in the IFLOWS contained within SAP Cloud Integration.


SAP HR
Proxy (interface) for each file type
SOAP Channel created for each proxy in SOAMANAGER
User authenticated using security certificate: SOAP channel
CPI


SAP HR
Transmit Report
Data
Response
CPI
XML Data + WS Security Header
Response Message
SOAP 1.2 Channel. Data authenticated using security certificate
UNJSPF
UNJSPF Web Service
Response to the XML File

3 PREREQUISITES

Before you start with the activities described in this document, ensure that the following prerequisites are met in SAP HR system and SCI.

3.1 SAP Notes

Check the following notes have been applied in the SAP HR system for UNJSPF Common HR Interface:

1 **Note 2918457** -> HR Interface: Changes to ESR objects released with note 2180355

2 **Note 2536555** -> Adjusting the proxy structures for UNJSPF HR interface

3 **Note 2479766** -> Legal Change to support UNJSPF Unique ID for Pension Fund in Common HR Interface.

3.2 Set Up Tenant

If this is your first use of SAP Cloud Integration (SCI) refer to the Welcome Kit that you should receive when your tenant is first provisioned. This Kit contains a link to the SCI Customer Success Portal (https://help.sap.com/viewer/p/SCP_CUSTOMER_SUCCESS_PORTAL/) where you can access a wide range of SCI related resources.

You will also receive a "SAP Cloud Integration Onboarding Guide' to guide you through the initial setup to get your tenant up and running.

For the subsequent configuration of SAP HR/ ERP, note down the URL of the tenant (it is the TMN URL which you received when the tenant was provisioned).

3.3 User Authorizations

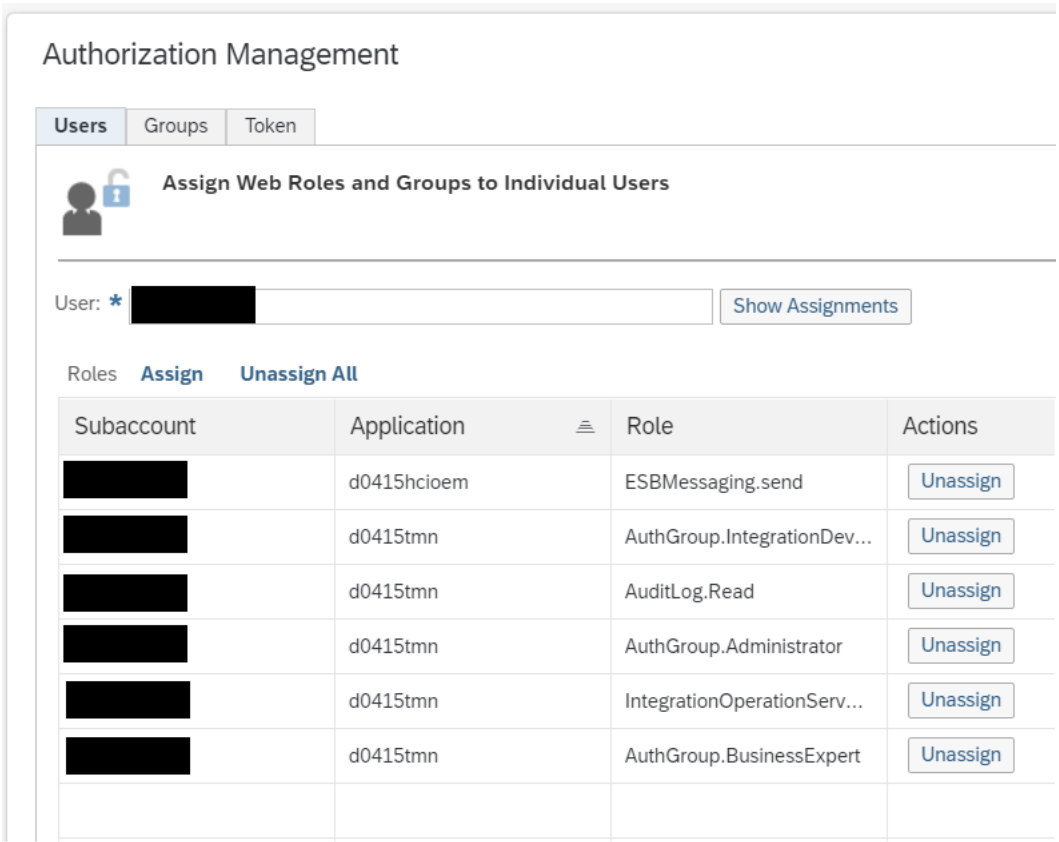
Administrator Access

Ensure that admin users in the tenant have enough rights and privileges to copy the NPO integration package and to configure and deploy the integration flow.

To deploy the security content, the required role is '**AuthGroup.Administrator'**.

End User Access

End users are the ones who are essentially executing the HR Transmit report from the SAP HR system. The end users are to be added in SCI tenant as members and assigned the role "**ESBMessaging.send**". Only with this role the users will be able to transmit the employee details to Pension Fund authority. The end users can either use their SCI User credentials or can use a single sign on certificate to send a message through SCI.

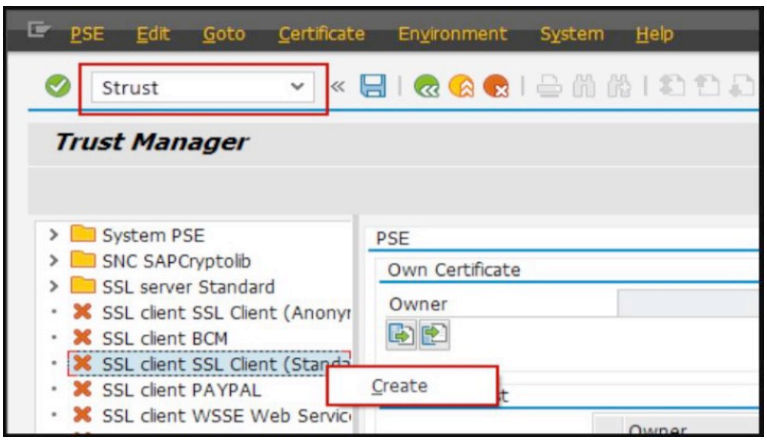


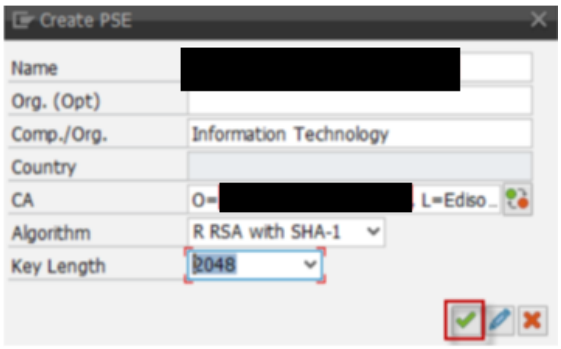
3.4 Ensure CA Signed Certificate installed in STRUST of SAP HR system

The recommended communication method between the SAP HR system and SCI is certificate-based authentication. (User name and password is possible but not recommended for usability reasons as the user would need to enter their details multiple times). In order to facilitate this **a CA signed certificate is required** from the SAP HR system which is then installed in STRUST and the public key noted in the relevant integration flows. (Note that the key pair will only be accepted by the SAP Load Balancer if it is signed by an SAP approved CA).

If you do not already have a CA signed certificate available, follow these steps:

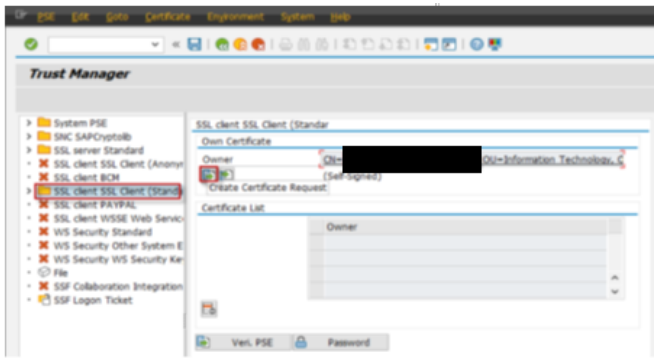
a. Go to STRUST transaction

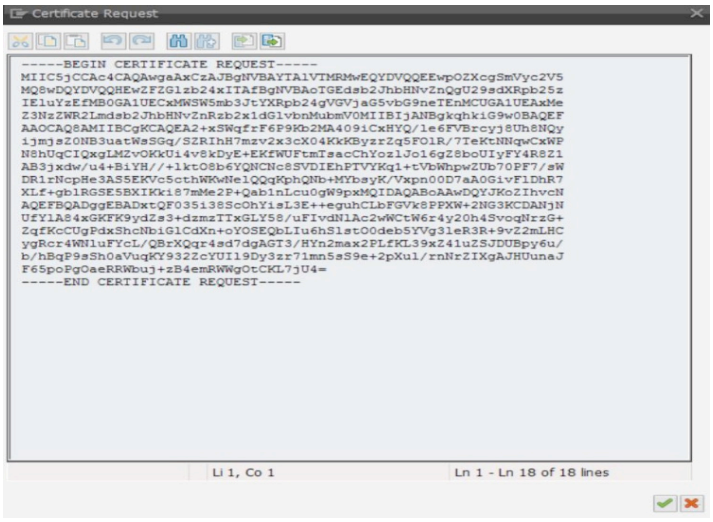




b. Below is the example show DN of the certificate:

DN = CN=erpc.externaldomain.com, OU=Information Technology, O=mycompany Inc, L=Location, S=State, C=Country





c. This is the CSR. Copy the CSR and get it signed by a Certificate Authority.

Note: CA should be in the Trust list of SCI. Please check for the latest SCI trust list here.

d. Import the certificate response in STRUST.

e. Take note of the directory where the certificate is stored as this will referenced when the logical ports are configured (section 5).

More help on PSE/certificate can be found in the link

https://help.sap.com/saphelp_nw73ehp1/helpdata/en/59/6b653a0c52425fe10000000a114084/frameset.htm

4 SETUP STEPS IN SAP CLOUD INTEGRATION

As part of the initial release, there are 2 SSCI artifacts delivered.

Artifacts related to types of XML file data sent to Pension Fund authority – UNJSPF.

iFlow Name	Description
HR Master Data Transmit	Any new hires or any HR master data change will be reported to UNJSPF.
HR Master Data Response	Receive response from UNJSPF for all the master data sent using HR Master Data Transmit.

These integration flows are routed through the SAP HR system server using SOAP. The authorization for these integration flows is to be set at the logical ports created in transaction SOAMANAGER. For SOAP endpoint, the authorization can be set to user credentials or X.509 SSL certificate installed in STRUST of the SAP HR/ERP system. This is explained in Section 3.4 of this document.

HR Master Data Transmit
HR Master Data Response

In case the user wants to use the single sign on (SSO) certificate, the key pair of the certificate should be installed in the local machine/PC from where user will send the file. Once the certificate is installed, the user must configure the public certificate of the SSO in SCI. This step is described in Section 6 of this document.

4.1 Copy Published Package into Your Package

Go to the 'Discover' chapter of your tenant and find the package '**SAP ERP HCM integration with Pension Fund Authority – UNJSPF for NPO HR Master Data**'.

Click on package name, then click 'Copy' in the upper right corner:

Note: the package version on the screenshot may differ from the one shown above.

4.2 Deploy certificates and credentials to SCI tenants

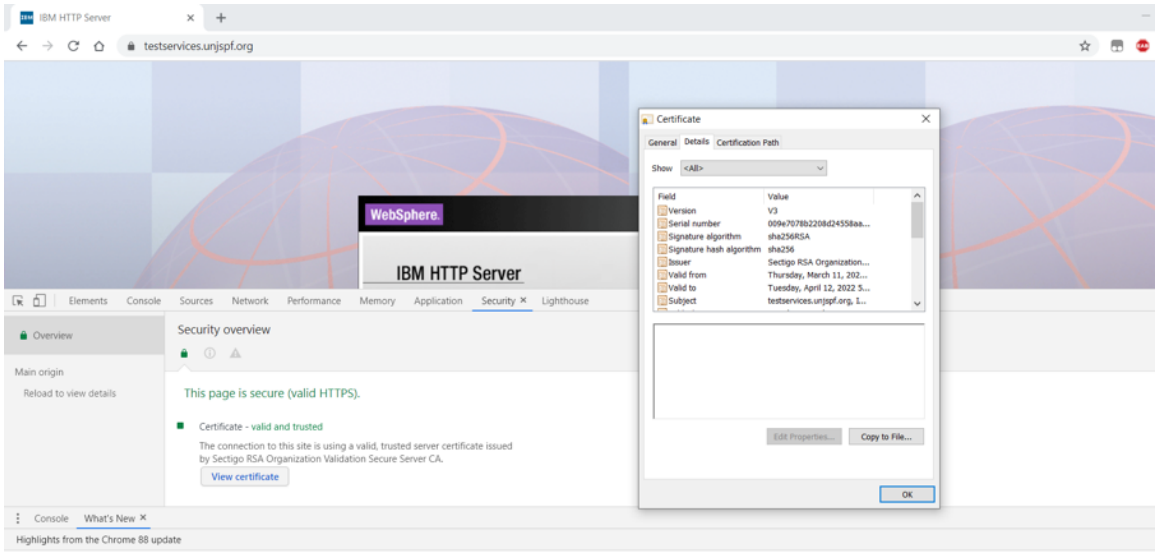
For the communication with the Pension Fund authority web service, you must make sure that the certificates from pension fund authorities are part of the Java KeyStore that is uploaded to the SCI tenant.

How do I deploy certificates to SCI tenants?

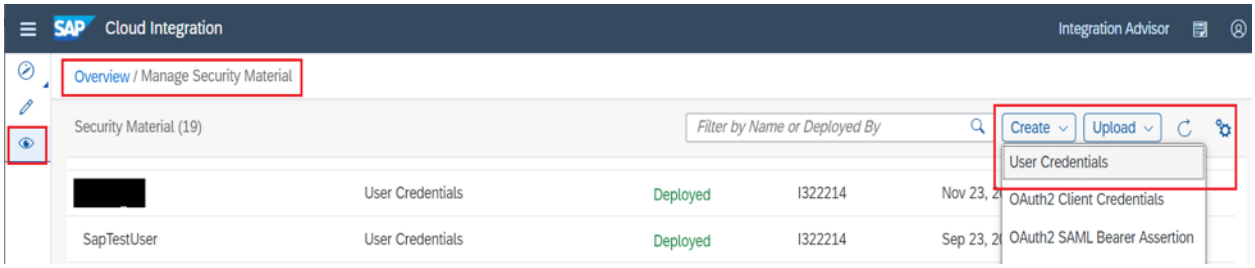
Take the following steps to download the certificates from the website of UNJSPF.

1. Enter the URL https://testservices.unjspf.org
2. Right click on the Page and select Inspect
3. Select Security Tab and click on View Certificate
4. Copy the certificate to a file using the Copy to File button and save it to your machine.

For the communication with the Pension Fund gateway, you must make sure that the certificates from pension fund authorities are part of the Java KeyStore that is uploaded to the SCI tenant.



5. Open a ticket to SCI Cloud Operations and request them to update Java KeyStore with the certificates.
6. To update credentials, go to the 'Operations View' on Tenant, enter 'security material' and click on 'Create -> User Credentials'. Maintain the user credentials provided by Pension Fund authority - (UNJSPF) to access their web service.



4.3 Sender Channel Connection Authorization

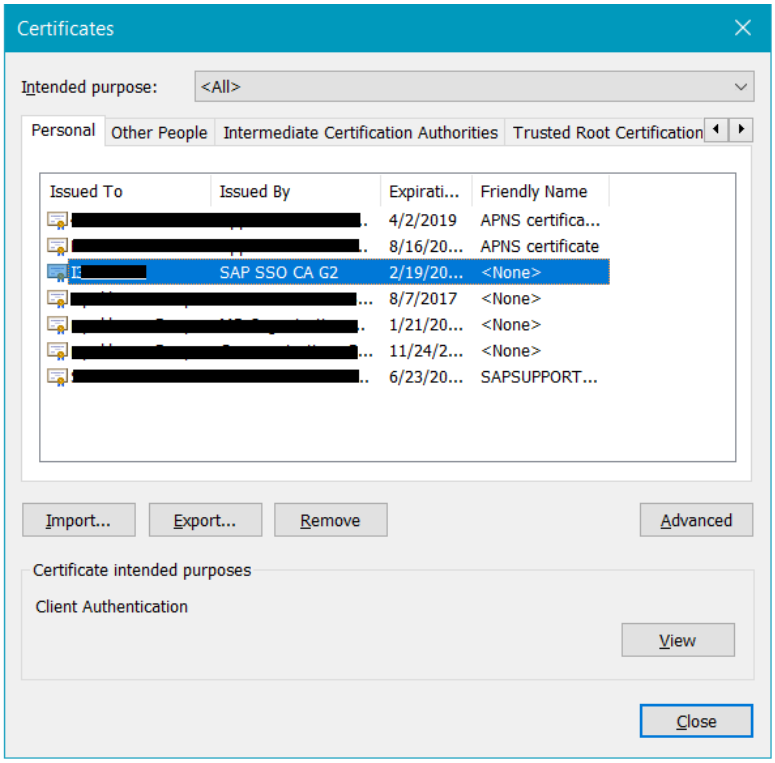
If you want to configure the authorization by certificate (rather than username and password), then you will have to use the client certificate that is installed in the user's PC to identify the user. The SAP Passport certificate that users get when they receive an SAP "S" number can be used for this purpose. The steps to download and assign the certificates are as follows:

Note: If you wish these integration flows to use username/password as the authentication method no further steps are required.

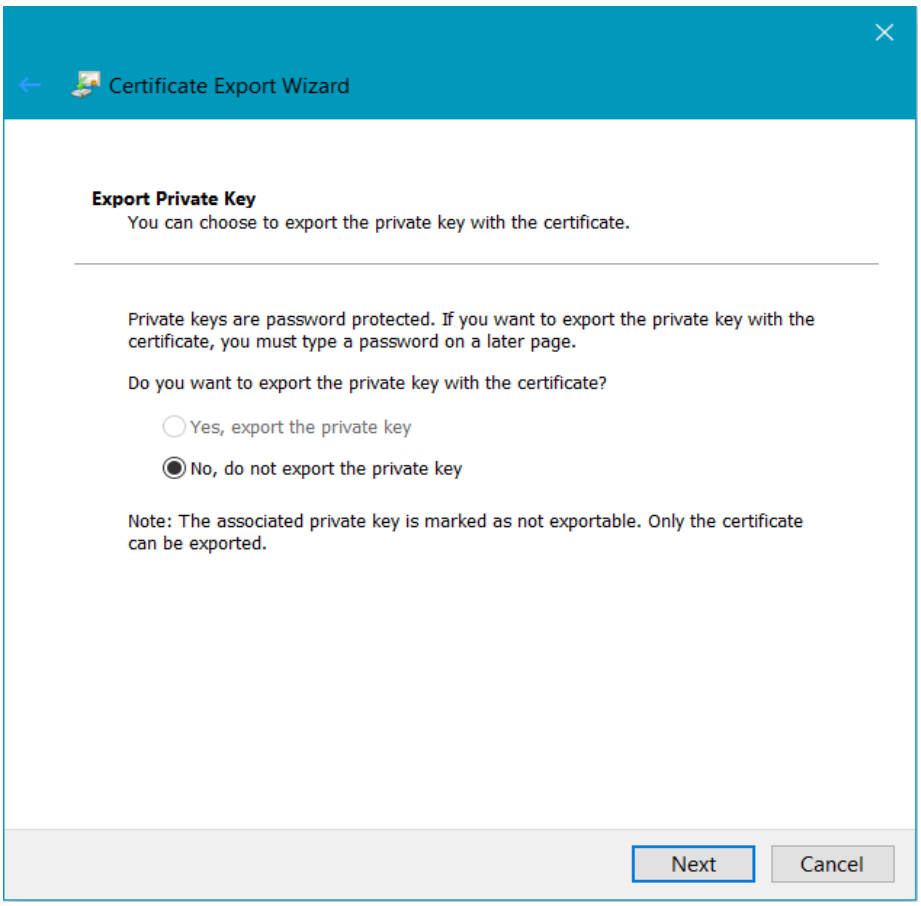
4.3.1 Download the public certificate from the browser

a. Open internet explorer settings -> internet options -> content -> certificates

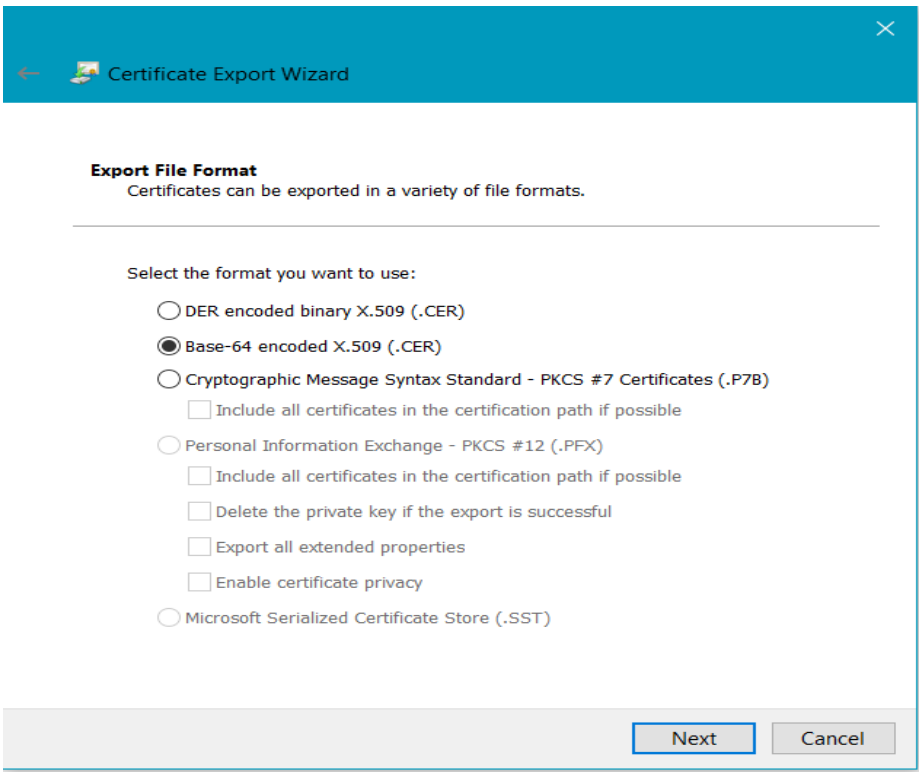
b. Select the certificate which you wish to use for authenticating the user and click on "Export" button.



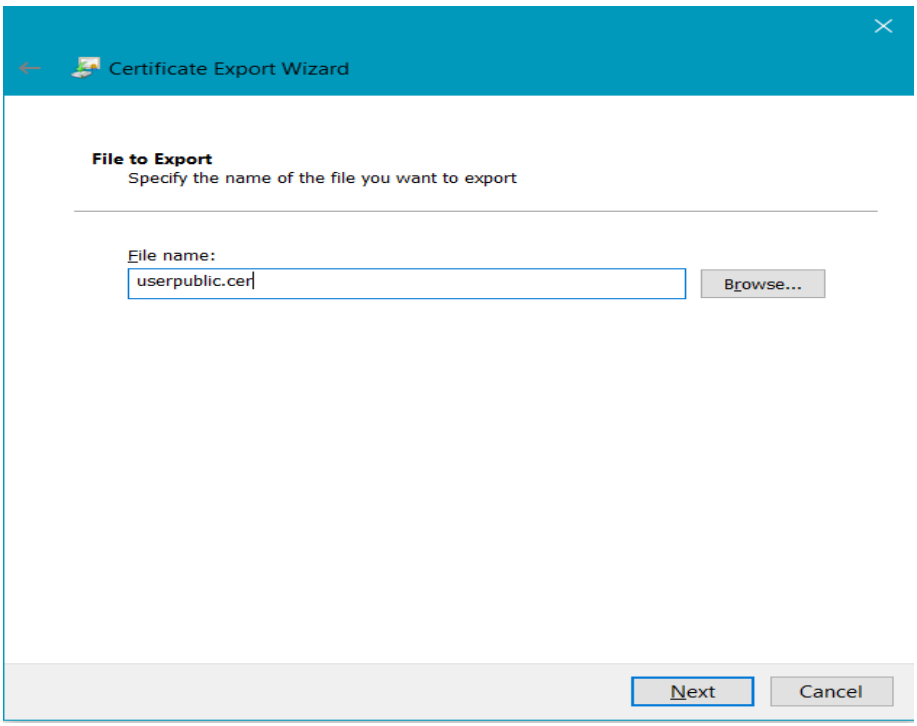
c. Select "No, do not export the private key"



d. Select “Base-64 encoded” option and save the



e. Save the certificate with “.cer” extension

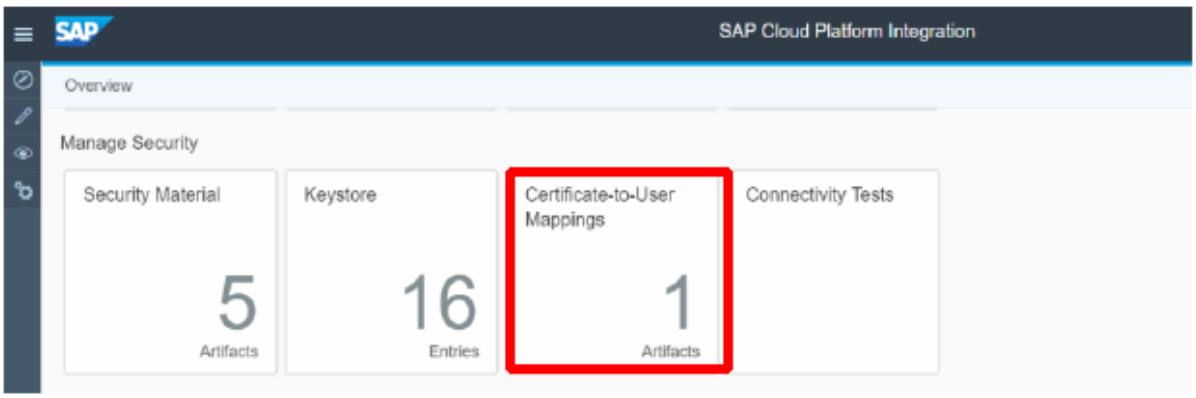


4.3.2 Assign the public certificate for authorization

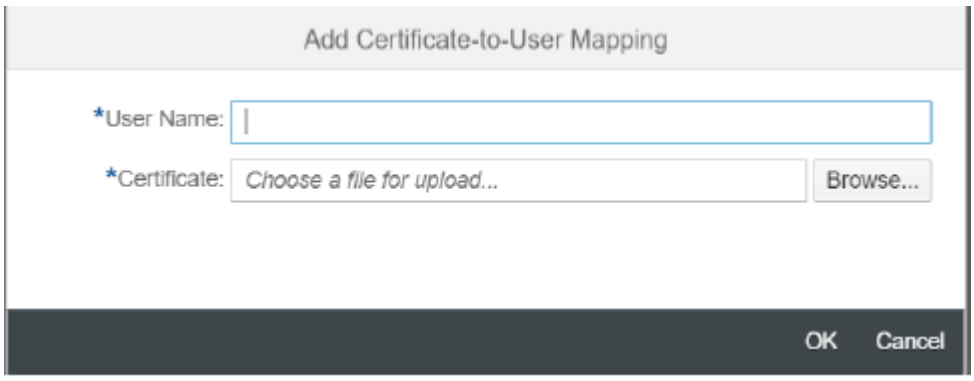
The certificate then needs to be associated to the SCI user id and it is recommended that this be done through the 'certificate-to-user mapping' settings. (Note: It is technically possible to assign the user's certificate directly to the corresponding integration flows but this is not recommended as only one use can be assigned and it is recommended that at least two users have the ability to file in case one user is absent.)

Note that all users should have the authorization role "ESBMessaging.send" assigned to them so that they are able to invoke the integration flows.

- Go to SAP Cloud Integration-> Overview ->Certificate-to-User Mappings.



- Enter a User Name with "ESBMessaging.send role", upload the SSL certificate.



4.4 Configure Integration Flows

You will be configuring the integration flows to transmit and receive response for any HR master data changes.

- **HR Master Data Transmit**
- **HR Master Data Response**

4.4.1 HR Master Data Transmit

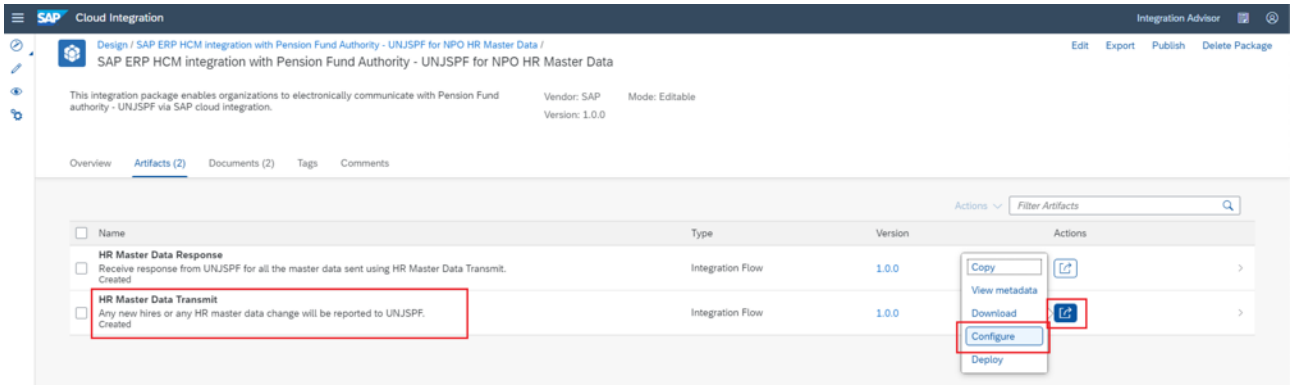
This integration flow is used to send details of any new hires or HR any master data change to Pension Fund authority – UNJSPF.

Steps:

1 Go to the integration package that was copied from the original '**SAP ERP HCM integration with Pension Fund Authority – UNJSPF for NPO HR Master Data**'

2 Click on the Artifacts tab

3 Click on action button that corresponds to integration flow 'HR Master Data Transmit'.

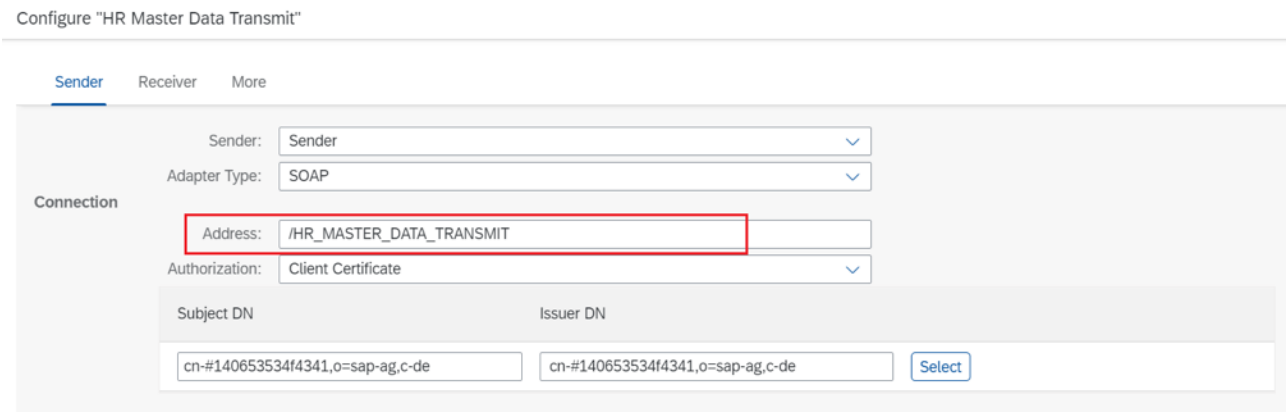


4 Choose Configure and maintain the following configuration parameters:

Sender Tab

The sender for this scenario is the SAP HR system. The communication protocol for this connection used is SOAP. The connection is established in SAP HR system using SOA manager.

- Update the connection address in the format "/XXXXX", where XXXXX can be any meaningful word for HR Master Data Transmit.

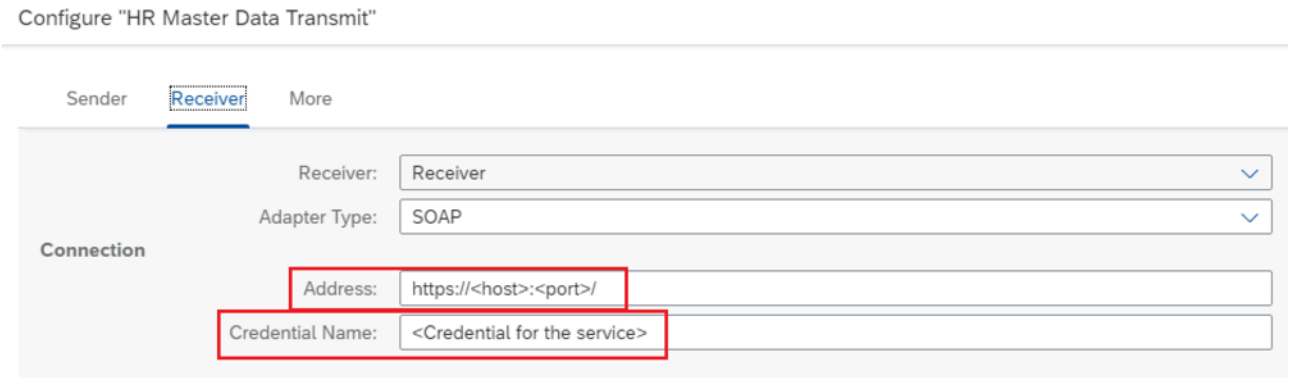


Note: The connection address must be unique within a tenant.

- In the 'Authorization' field enter 'Client Certificate' and then enter the public key of the certificate stored in STRUST, referenced in prerequisite step 3.4.

Receiver Tab

The receiver for this scenario is UNJSPF web services. The communication protocol for this connection used is SOAP.

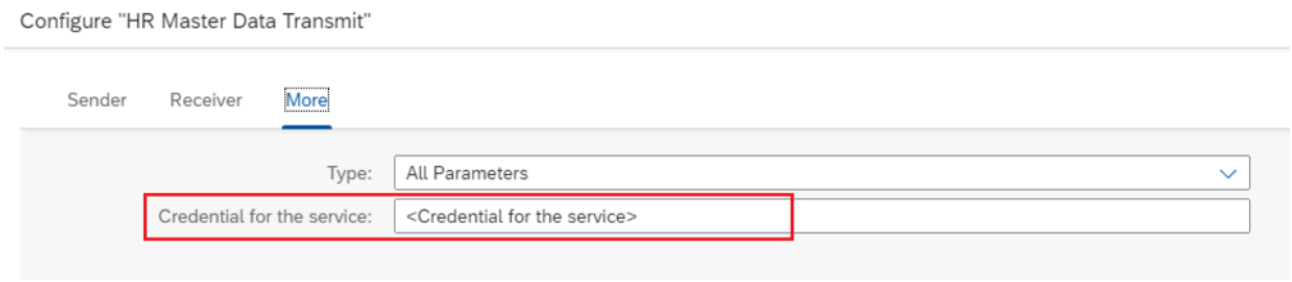


Address: Enter the following production UNJSPF web services URL address
https://services.unjspf.org/ws.CommonSoapServices/CommonHrService_CommonHrHttpService

- Credential Name: Enter the name of Alias of the user credentials maintained in security material, created in prerequisite step 4.2.

More Tab

Credential Name: Enter the name of Alias of the user credentials maintained in security material, created in prerequisite step 4.2.



5 Select Save and Deploy to save your configuration and to deploy it actively to server, respectively.

4.4.2 HR Master Data Response

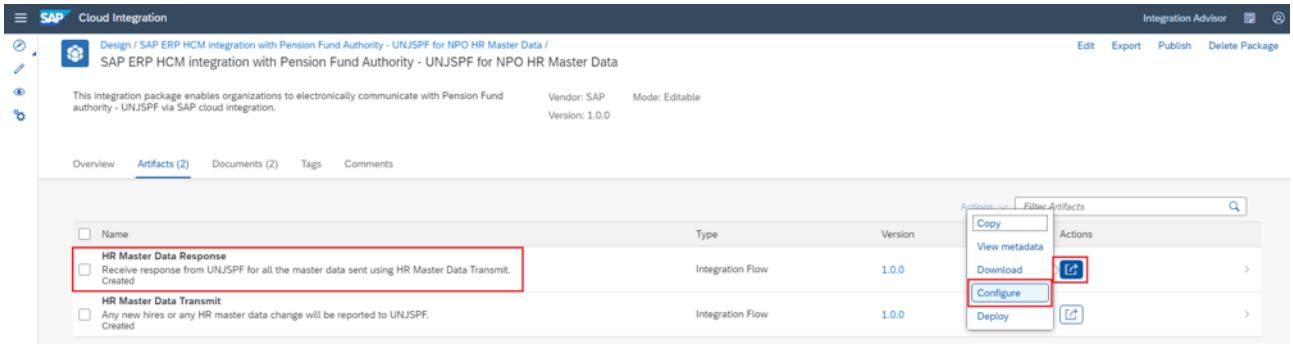
This integration flow is used to receive response from Pension Fund authority - UNJSPF for all the master data details sent using HR Master Data Transmit.

Steps:

1 Go to the integration package that was copied from the original '**SAP ERP HCM integration with Pension Fund Authority – UNJSPF for NPO HR Master Data**'

2 Click on the Artifacts tab

3 Click on action button that corresponds to integration flow 'HR Master Data Response'.

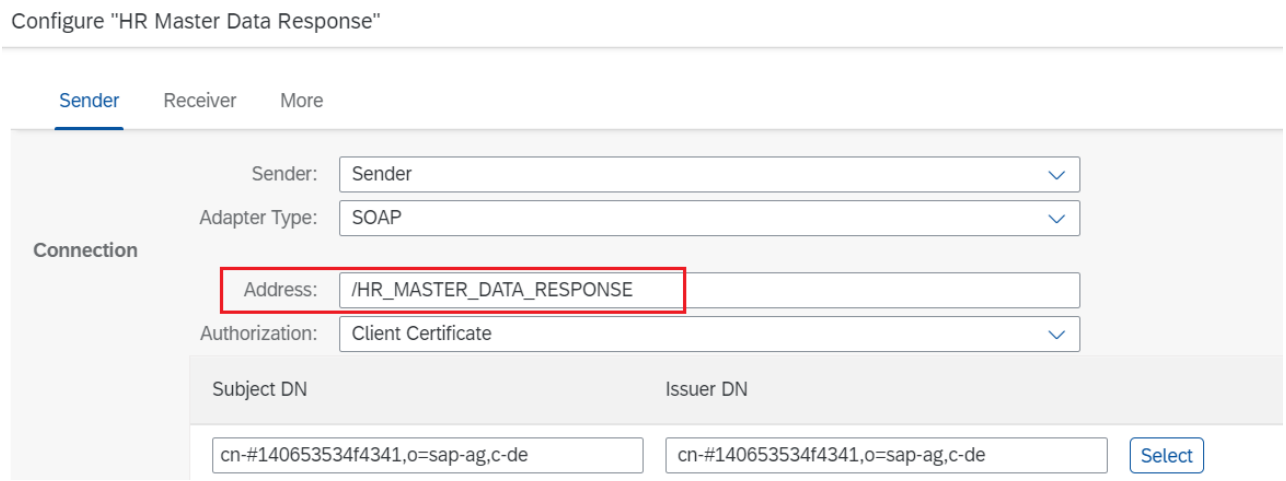


4 Choose Configure and maintain the following configuration parameters:

Sender Tab

The sender for this scenario is the SAP HR system. The communication protocol for this connection used is SOAP. The connection is established in SAP HR system using SOA manager.

- Update the connection address in the format "/XXXXX", where XXXXX can be any meaningful word for HR Master Data Response.

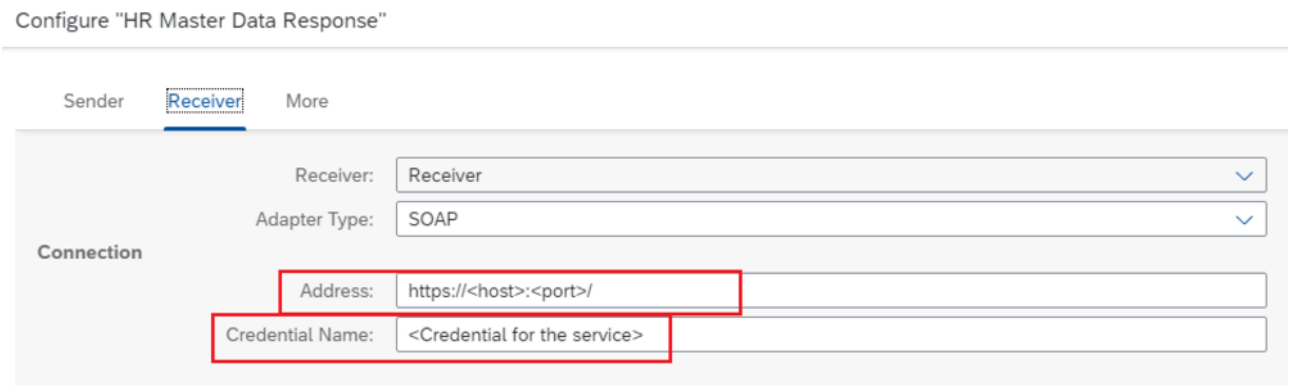


Note: The connection address must be unique within a tenant.

- In the 'Authorization' field enter 'Client Certificate' and then enter the public key of the certificate stored in STRUST, referenced in prerequisite step 3.4.

Receiver Tab

The receiver for this scenario is UNJSPF web services. The communication protocol for this connection used is SOAP.

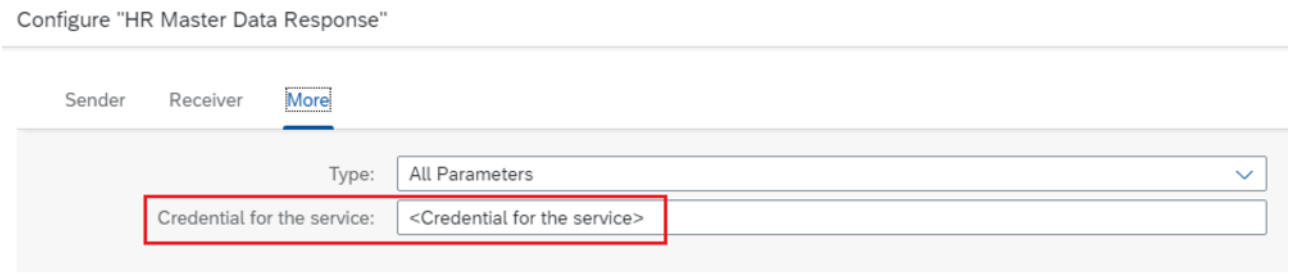


Address: Enter the following production UNJSPF web services URL address
https://services.unjspf.org/ws.CommonSoapServices/CommonHrService_CommonHrHttpService

- Credential Name: Enter the name of Alias of the user credentials maintained in security material, created in prerequisite step 4.2.

More Tab

Credential Name: Enter the name of Alias of the user credentials maintained in security material, created in prerequisite step 4.2.



5 Select Save and Deploy to save your configuration and to deploy it actively to server, respectively.

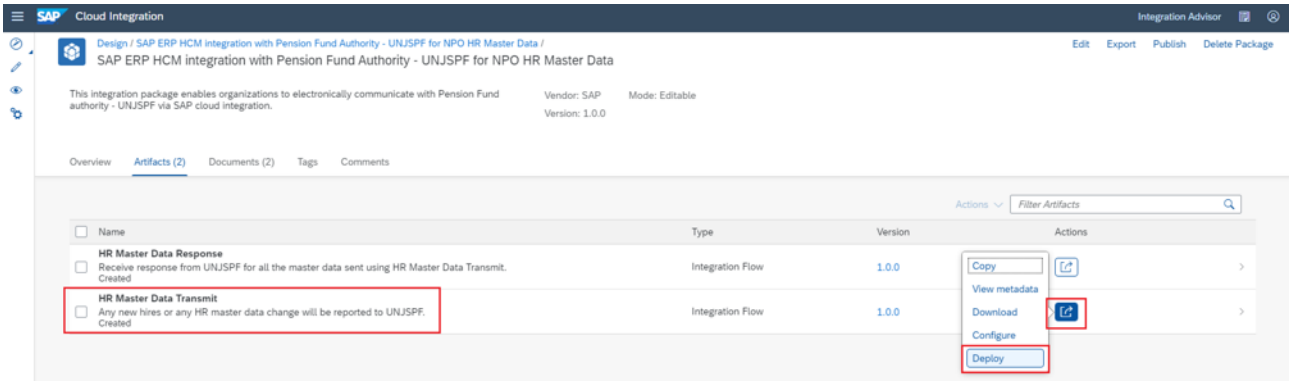
4.5 Deploy Integration Flows on test and productive tenants

Take the following steps to deploy the Integration Flows on test and productive tenants:

1. In your SCI tenant, from the menu in the upper left corner, choose Design.

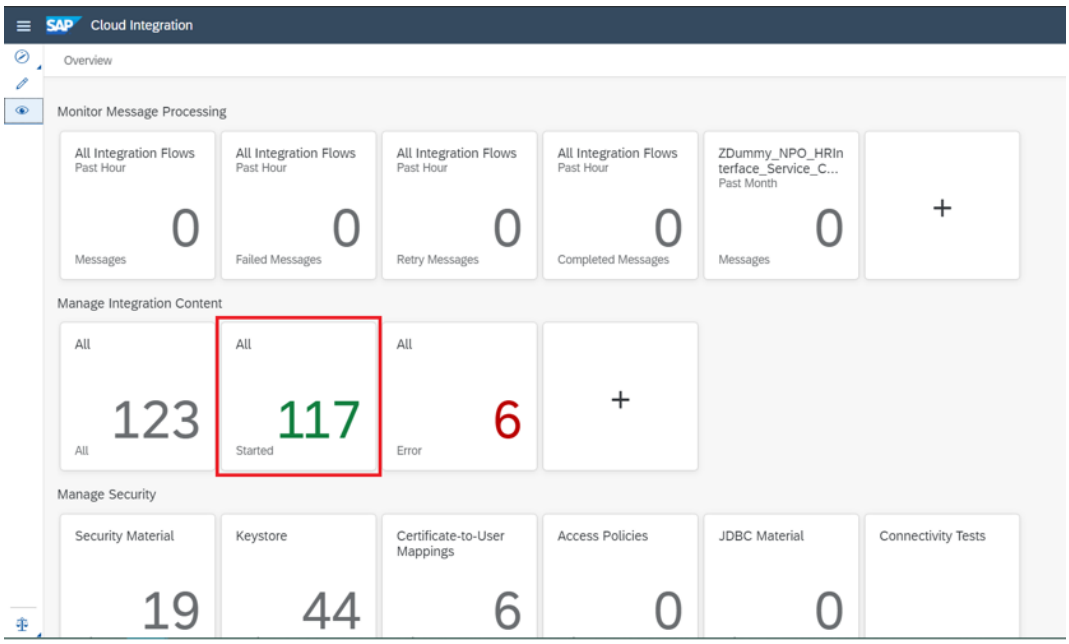
2. Click the package name. Select Artifacts Tab.

3. For the Integration Flow that you want to deploy, choose Actions -> Deploy.



4. Repeat steps 1-3 for each of the Integration Flows in '**SAP ERP HCM integration with Pension Fund Authority – UNJSPF for NPO HR Master Data**' packages.

5. Check and make sure all Integration Flows have been deployed successfully.
   a. In your SCI tenant, choose Monitor from the menu in the upper left corner.
   b. Under Integration Content Monitor, choose the Started tile.



c. Check the deploy status of each Integration Flow.

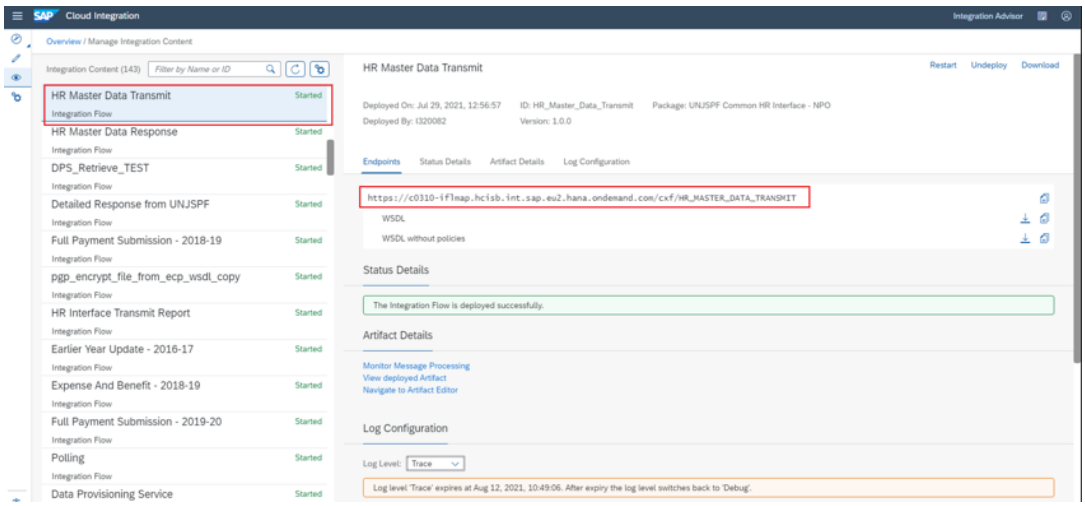
If the Status is Started, it means the Integration Flow has been deployed successfully.

6. Note down the URLs of the endpoints for each service.

This URL will be used later for the setup of SAP HR system.

a. Select the Integration Flow form the list.

b. Note down the endpoint URL present on the right side of the screen under Endpoints Tab.



5 SETUP STEPS IN SAP HR OR SAP S/4HANA SYSTEM

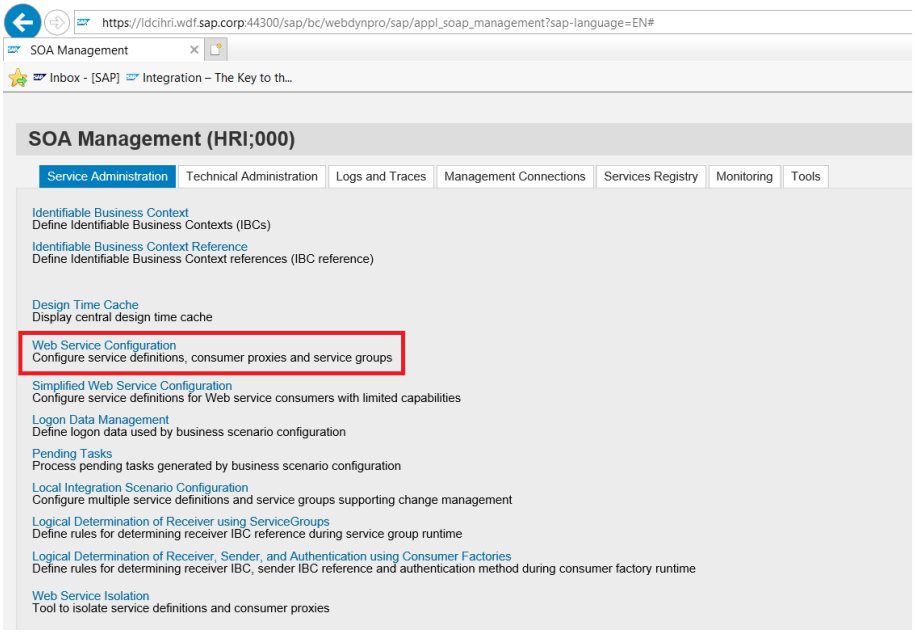
The connection between SAP HR system and SCI needs to be established for communication purpose.

5.1 Create the logical ports in SOAMANAGER

The proxies must be connected to the SAP CLOUD INTEGRATION tenant via logical ports. In the productive SAP HR or SAP ERP system, the logical ports are configured to connect to the productive SAP CLOUD INTEGRATION tenant.

Note: The look and feel of the screens in your system may differ from the screenshot below, depending on your release.

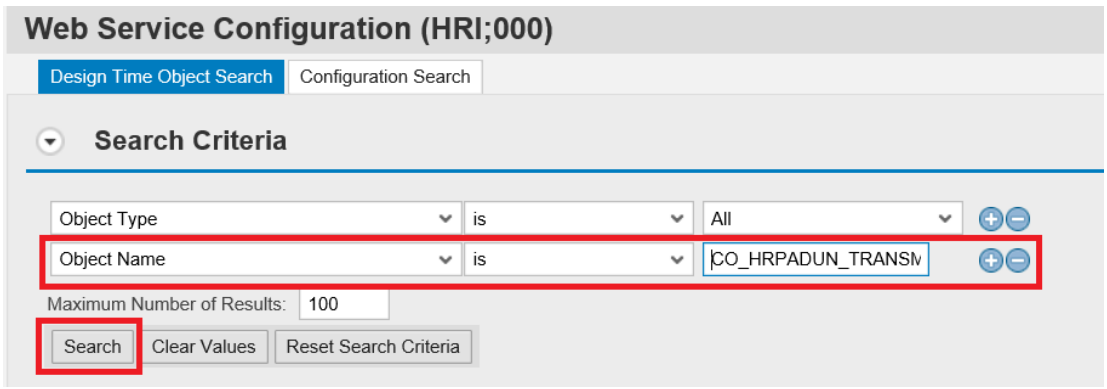
1. In your SAP ERP/ECP system, go to transaction **SOAMANAGER**.



2. Select Web Service Configuration and find the proxies created for UNJSPF Common HR Interface reporting.

   (Note that these will only be available if SAP Notes 2918457, 2536555 and 2479766 are implemented.)

3. Search for the object name CO_HRPADUN_TRANSMIT_STAFF_MEMB and click Search.



4. Create logical port(s) name for each proxy.

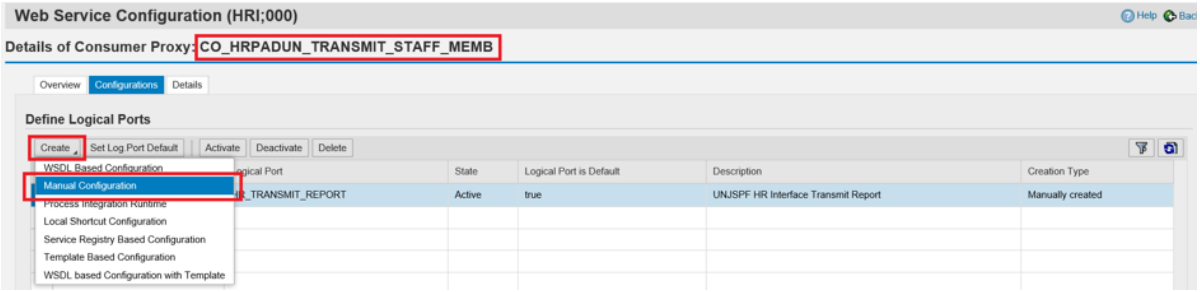
   The logical ports you'll be creating are:

Logical Port Name	Description	Corresponding integration flow	Example of CXF path
LP_CO_HR_TRANSMIT_REPORT	Logical port for HR Master Data Transmit integration flow in SAP Cloud Integration	HR Master Data Transmit	cxf/HR_MASTER_DATA_TRANSMIT
LP_CO_HR_GET_REPORTS	Logical port for HR Master Data Response integration flow in SAP Cloud Integration	HR Master Data Response	cxf/HR_MASTER_DATA_Response

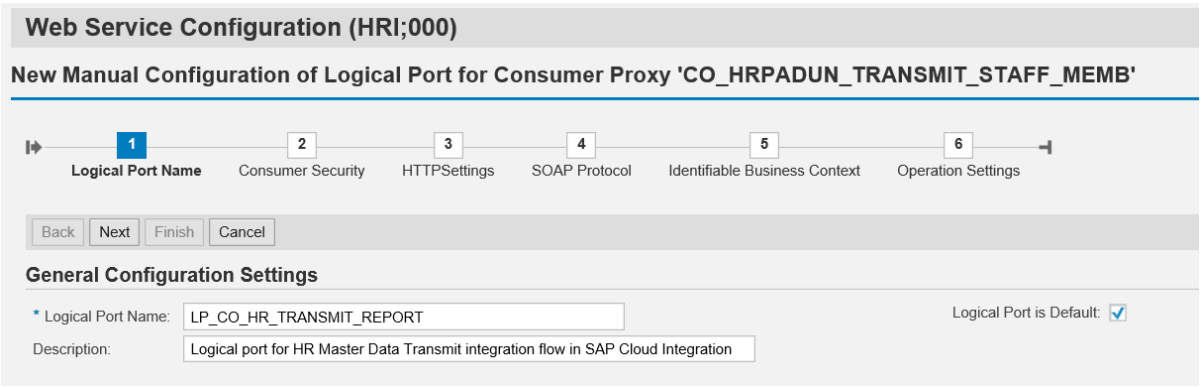
The steps are the same for all the logical ports.

This document has the example for "LP_CO_HR_TRANSMIT_REPORT" and this can be used as an example to create for LP_CO_HR_GET_REPORTS port.

a. Click on the Create button and choose Manual Configuration.



b. Enter the logical port name and description.

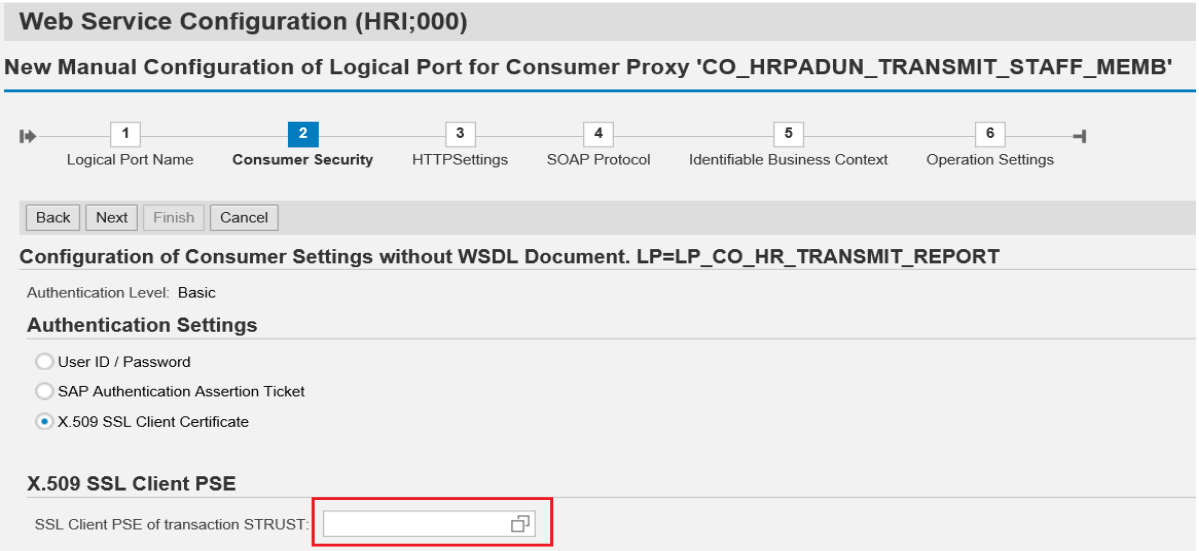


c. The Consumer Security tab page specifies the authentication method used for communication between SAP HR/ERP/ECP and SCI.

   - In the 'Authentication Settings' select the X.509 SSL Client Certificate radio button.

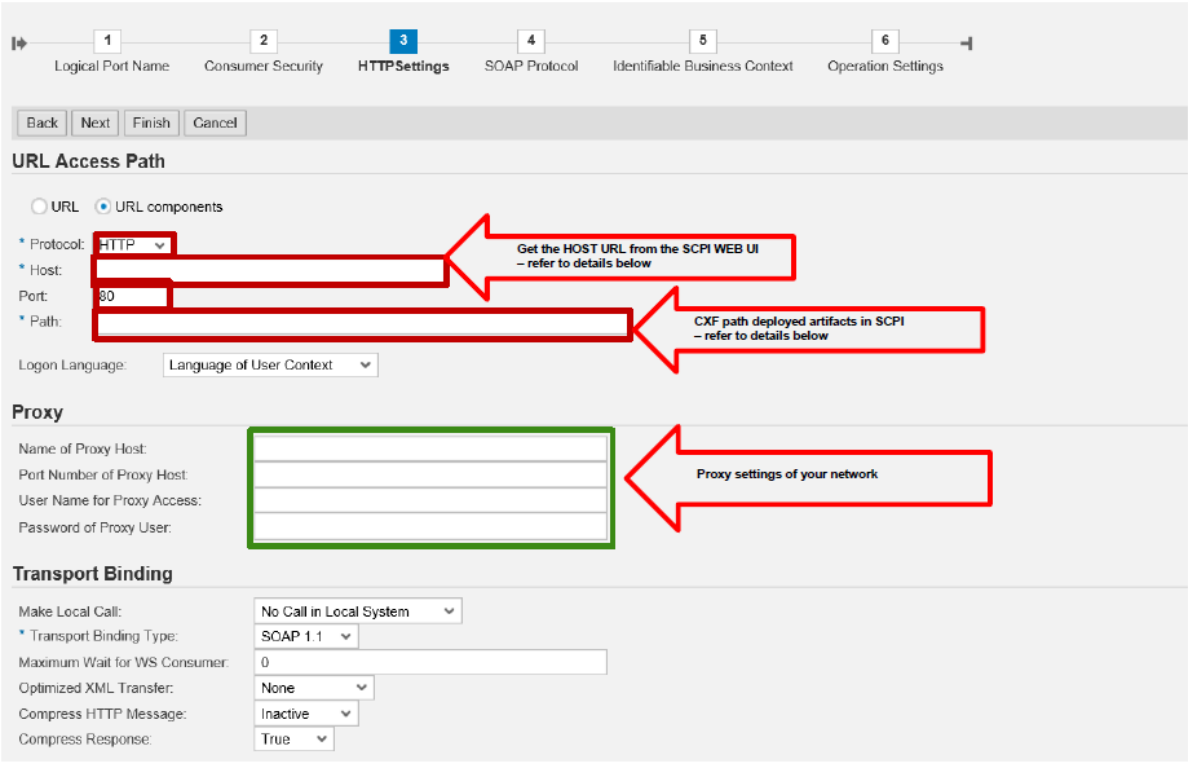
- In the “SSL Client PSE of transaction STRUST” field, use the drop down to find the certificate stored in STRUST as part of prerequisite step 3.5.

  Note: if you do not see this radio button or cannot select it, please refer to notes 2368112 “Outgoing HTTPS connection does not work in AS ABAP” and 510007 “Setting up SSL on Application Server ABAP”.

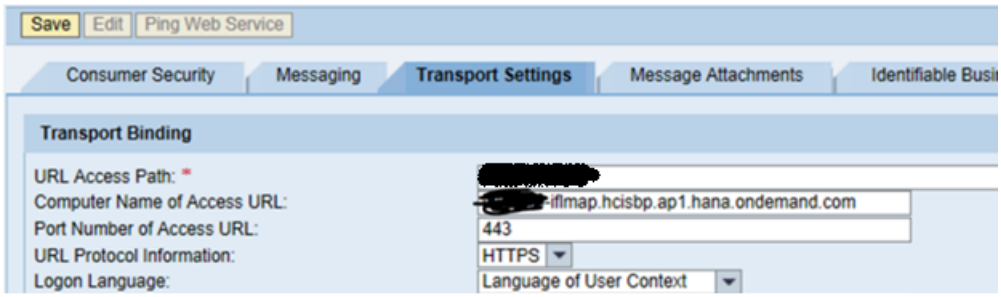


Note: The solution will support User ID/Password authentication between SAP HR/ERP and SCI, but this is not recommended for usability reasons in a productive environment. If you decide to use this method the authorization method referred to in the previous section for the integration flows (HR master data transmit and HR master data response) will need to be changed to ‘User’ and the user role set to ‘ESBMessaging.send’.

d. On the HTTP Settings tab page, make the following entries: Note: the screenshots may look slightly different in your system depending on the release, but all the required fields should be available.



Note that in older version the above screen may look different, but the fields will still be present, for example:



The computer Name of access URL is the first part of an URL without the forward slash '/'.

The URL access path is part of an URL which starts from forward slash '/'.

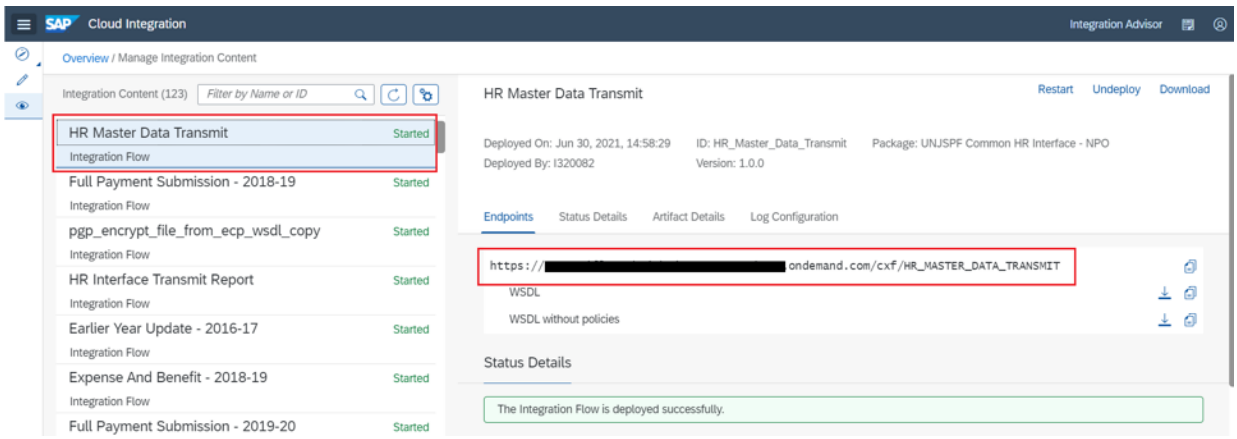
For e.g., URL = https://c0310-iflmap.hcisb.int.sap.eu2.hana.ondemand.com/cxf/HR_MASTER_DATA_TRANSMIT

Computer name: cdf-iflmap.hcisb.int.sap.hana.ondemand.com

Access path: /cxf/HR_MASTER_DATA_TRANSMIT

e. Get HOST URL & CXF path from SCI WEB UI

To find the Host, go to Cloud Integration Web UI, choose Monitor and under Managed Integration Content go to All. Use the search to find your integration flow as in the screenshot below:



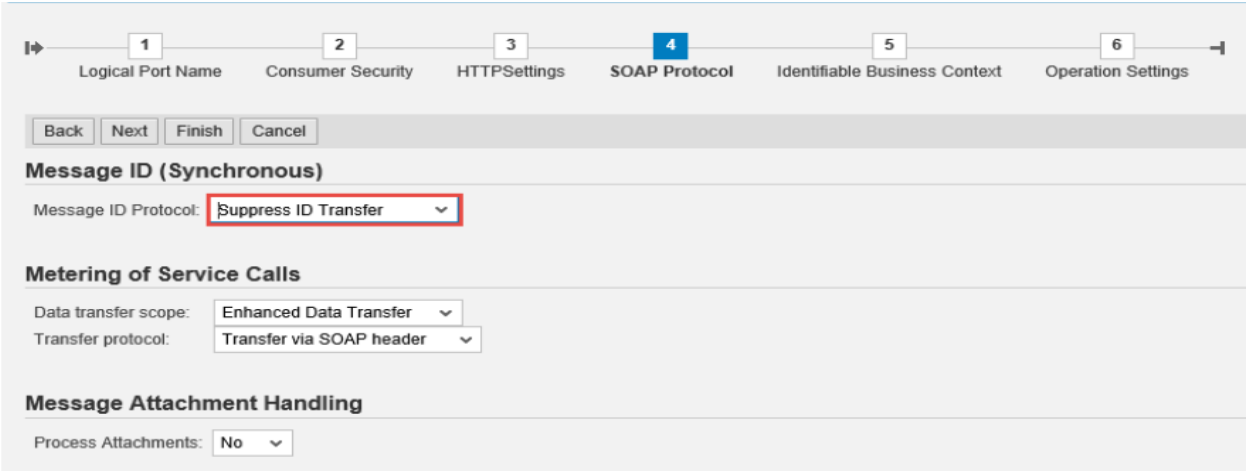
The URL found under the Endpoints section has the HOST URL and the CXF path.

Host URL = xxxxxxxxxx.sap.hana.ondemand.com/cxf/HR_MASTER_DATA_TRANSMIT

CXF path = /cxf/hr_master_data_transmit

Note that the entries for the Proxy fields depend on your company's network settings. The proxy server is needed to enable the connection to the internet through the firewall.

f. On the SOAP Protocol tab page, set Message ID Protocol to Suppress ID Transfer



g. No settings required in the tabs Identifiable Business Context and Operation Settings. Just select Next and then Finish.

NOTE: In case you want to test your configuration, do not use WebService Ping, as it is not supported by SAP Cloud Integration. But you can setup a HTTP connection in transaction SM59. Maintain the host and port of SAP Cloud Integration service (e.g., for path /cxf/hr_master_data_transmit) and execute a connection test. In case of a successful connection you will receive an error with HTTP return code 500.

6 TESTING

6.1 Testing HR Interface Transmit Report

Take the following steps to test the outbound reporting function. Here we use the HR Interface Transmit Report (HUNAPFI0) as an example.

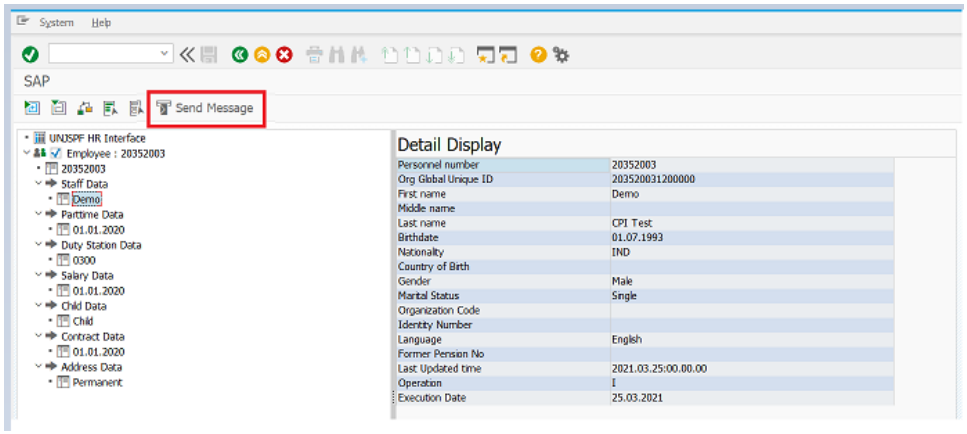
1. Go to transaction SE38.

2. Enter the report name HUNAPFI0 and choose the Execute (F8) button.

3. Enter the relevant selection criteria and choose the Execute (F8) button with 'Submit Data to UNJSPF' radiobutton.

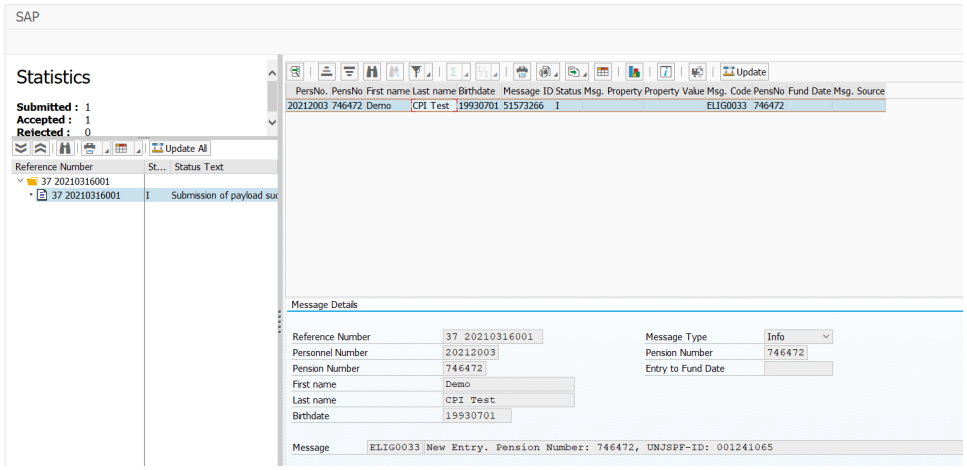
4. In the output screen, click 'Send Message' button.

5. Result: The file is submitted successfully to the Pension Fund authority.



6.2 Testing HR Interface Get Reports

In the SAP HR system, execute the report 'HUNAPFI1', select the transmission and click on 'Get Reports' button for which response need to be received from UNJSPF.



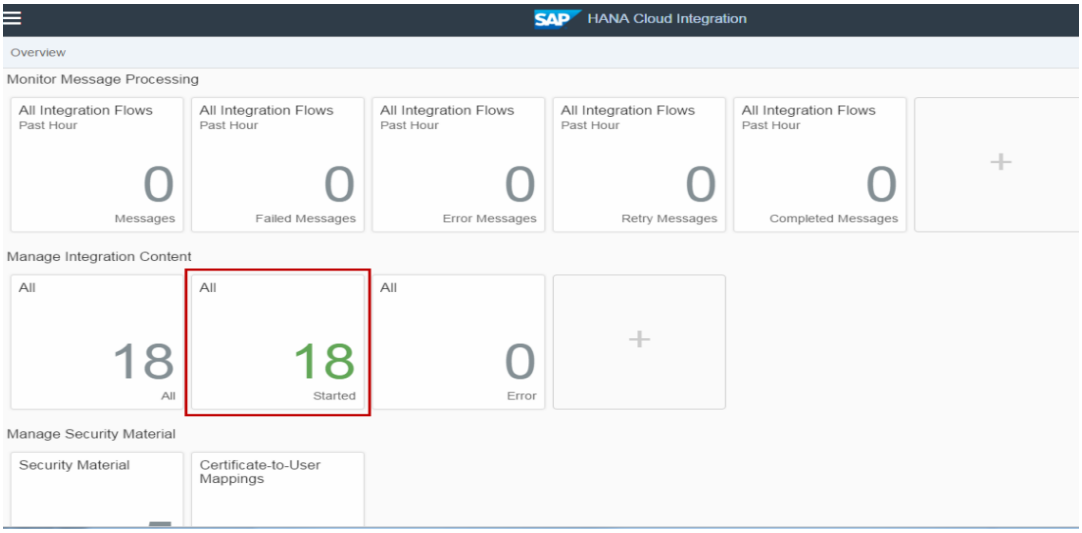
7 APPENDIX: UN-DEPLOYING AND DELETING OLD INTEGRATION FLOWS

The Integration Flows in package 'UNJSPF Common HR Interface – NPO' must be updated and redeployed each time a new legal change is announced by Pension Fund authority - UNJSPF. Therefore, if you have already deployed these Integration Flows, you must un-deploy the old Integration Flows before deploying the Integration Flows with new legal changes, and then delete the old Integration Flows.

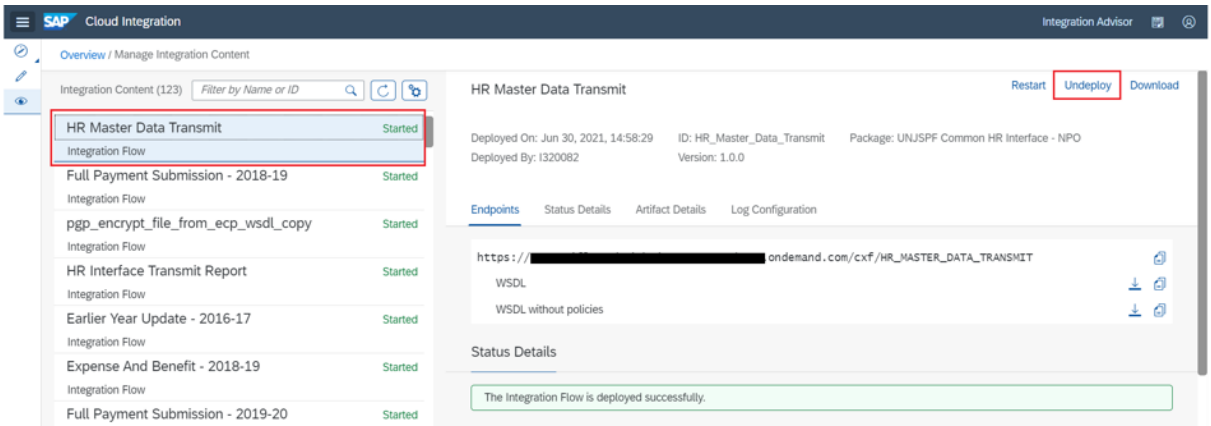
➔ **How do I un-deploy Integration Flows?**

1. In your SCI tenant, choose Monitor from the menu in the upper left corner.

2. Under Integration Content Monitor, choose the Started tile.



3. Select the Integration Flow that you want to un-deploy and then click Undeploy.



4. After the system un-deploys the Integration Flow, check that the number on the Started tile is reduced by one and the Integration Flow is no longer in the list of started artifacts.

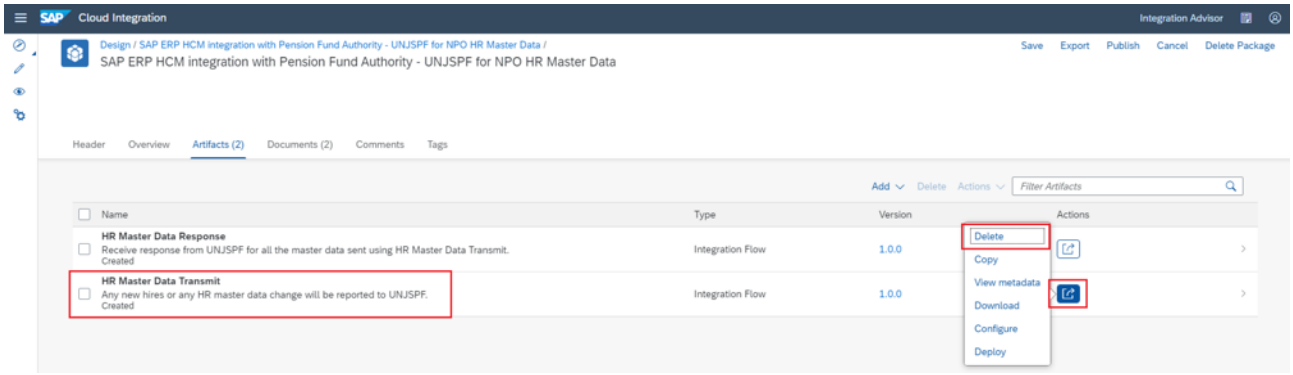
5. Repeat the above steps to un-deploy each of the Integration Flows for which new legal changes have been published.

➔ **How do I delete Integration Flows?**

To delete single Integration Flow from integration package, you must select the iFlow that contains old changes. For this:

1. In your SCI tenant, from the menu in the upper left corner, choose Design.

2. Click the package that contains the old Integration Flow, and then select artifact which should be deleted by clicking Action -> Configure -> Delete.



8 MAINTENANCE

Take note of the expiry date of all certificates used in the solution and put in processes so that these are renewed before they expire, and the configuration updated accordingly with the new details.

www.sap.com/contactsap

THE BEST RUN SAP®