Integration Guide | PUBLIC
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Colombia Electronic Payroll: Setting Up SAP Cloud Integration (SAP ERP, SAP S/4HANA) - Neo Environment

THE BEST RUN SAP

Content

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2 Introduction

You use SAP Cloud Integration to establish the communication with external systems with whom you want to exchange electronic documents created with *SAP Document and Reporting Compliance*. This document lists the required setup steps you perform in the SAP ERP or SAP S/4HANA system* and the SAP Cloud Integration tenant so that the integration between the systems works.

The setup steps are typically done by an SAP Cloud Integration consulting team, which is responsible for configuring the SAP back-end systems and the connection with SAP Cloud Integration. This team may be also responsible for maintaining the integration content and certificates/credentials on the SAP Cloud Integration tenant.

> **i** Note
>
> This document describes functionality that is provided by the Integration Package itself, that is, by the artifacts that are deployed in the SAP Cloud Integration tenant. It may happen, however, that in the SAP back-end systems the access to such functionality is only partially implemented. Additionally, it may also happen that the tax authority servers do not provide all services that are described in this document. Please refer to the relevant SAP back-end systems documentation and to the relevant tax authority information, respectively.

For the sake of simplicity in this guide, we mention SAP back-end systems when something refers to both SAP ERP or SAP S/4HANA.

3 Prerequisites

Before you start with the activities described in this document, ensure that the following prerequisites are met.

1. Document and Reporting Compliance: All relevant notes are installed in the test and/or productive systems.
2. SAP Cloud Integration test/productive tenants are live.
3. You have configured the connection from SAP back-end system to SAP Cloud Integration.

3.1 Installation of eDocument Framework

You have installed and configured the eDocument Framework in your test and productive systems. If you did not install the latest support package for your system, refer to the SAP Note 2134248 for the installation guide of SAP Notes.

Application Help for eDocument

For more information about features and country availability of each solution, see the application help in the product page for eDocuments. https://help.sap.com/viewer/p/SAP_E_DOCUMENT. To find the latest published documentation for eDocument for your country, follow the steps below:

1. Choose from *Version* the release you are interested in.
2. To get to the documentation for a given country, under *Application Help* choose *View All* and select your country.

3.2 Registration at Tax Authorities' System

You have completed the registration at the Colombian Tax Authorities, DIAN, and the following data is available:

- Certificate for digital signature (Private Key and Password)
- Approved ranger number
- User ID and Password to connect to DIAN's portal
- You find information about the authentication data at DIAN's web page under factura electronica:
  - Documentación y Normatividad tab: Official documents and regulations
  - Manuales y video tab: User guides

.

> **i Note**
>
> The information above mentioned is of responsibility of DIAN. SAP cannot be made liable for its correctness and accuracy.

4 Connectivity Steps

4.1 Setup of Secure Connection

You establish a trustworthy SSL connection to set up a connection between the SAP back-end systems and the SAP Cloud Integration. For more information, see Connecting a Customer System to Cloud Integration.

You use SAP ERP Trust Manager (transaction `STRUST`) to manage the certificates required for a trustworthy SSL connection. The certificates include public certificates to support outbound connections, as well as trusted certificate authority (CA) certificates to support integration flow authentication.

Refer to the system documentation for more information regarding the certificate deployment to SAP back-end systems. In case of issues, refer to the following SAP notes:

- 2368112 Outgoing HTTPS connection does not work in AS ABAP
- 510007 Setting up SSL on Application Server ABAP

For more information, refer to Operating and Monitoring Cloud Integration

> **i Note**
>
> If you encounter any issues in the information provided in the SAP Cloud Integration product page, open a customer incident against the `LOD-HCI-PI-OPS` component.

Client Certificate

If you are using a client certificate, this must be signed by one of the root certificates supported by the load balancer. A self-signed certificate is not suitable. For more information see Load Balancer Root Certificates Supported by SAP.

For information about creating your own certificate and get it signed by a trusted certificate authority (CA), see Authenticate Integration Flows [page 9].

4.1.1 Set Up SAP Cloud Integration Tenants

Ensure that your SAP Cloud Integration test and production tenants are live, and users in the tenants have the rights to copy the integration package and to configure and deploy the integration flows.

When your tenants are provisioned, you receive an email with a Tenant Management (TMN) URL. You need this URL when configuring on your SAP S/4HANA Cloud tenant the communication with the SAP Cloud Integration tenant.

To be able to deploy the security content you must be assigned the `AuthGroup.Administrator` role.

If you are a first-time user, you must first set up your users (members) and their authorizations in the SAP BTP cockpit.

4.1.2 Retrieve and Save Public Certificates

You perform this action in the back-end systems only if you are using certificate-based authentification. Not required for basic authentification.

Context

Find and save the public certificates from your SAP Cloud Integration runtime.

Procedure

1. Access the SAP BTP cockpit, and navigate to your subaccount (tenant) page.
2. Click the subscriptions link to display the subscriptions for your subaccount.
3. Select the subscription with suffix **`iflmap`** as this corresponds to your worker node within SAP Cloud Integration.

   Alternatively, use the URL emailed to you with your SAP Cloud Integration subscription details. The URL has the following format **`https://xxxxx.hana.ondemand.com/itspaces`**.
4. In the *Operations* view, choose *Manage Integration Content* and select *All* to display the integration flows available.
5. Select an integration flow to display its details.
6. Copy the URL listed within the *Endpoints* tab, and paste the URL into your web browser.
7. When prompted by the *Website Identification* window, choose *View certificate*.
8. Select the root certificate, and then choose *Export to file* to save the certificate locally.
9. Repeat these steps for each unique root, intermediate and leaf certificate, and repeat for both your test and production tenants.

4.1.3 Upload the Certificates

Store the public certificates used for your productive and test tenants.

Context

You use the SAP ERP Trust Manager (transaction `STRUST`) to store and manage the certificates required to support connectivity between SAP back-end systems and SAP Cloud Integration.

Procedure

1. Access transaction `STRUST`.
2. Navigate to the PSE for **SSL Client (Anonymous)** and open it by double-clicking the PSE.
3. Switch to edit mode.
4. Choose the *Import certificate* button.
5. In the *Import Certificate* dialog box, enter or select the path to the required certificates and choose *Enter*. The certificates are displayed in the *Certificate* area.
6. Choose *Add to Certificate List* to add the certificates to the *Certificate List*.
7. Save your entries.

4.1.4 Authenticate Integration Flows

Create an own certificate and get it signed by a trusted certificate authority (CA) to support integration flow authentication.

Context

You use the SAP ERP Trust Manager (transaction `STRUST`) for this purpose.

This process is required only if you use certificate-based authentication (that is, you choose the **`X.509 SSL Client Certification`** option in your settings for SOAMANAGER).

Procedure

1. Access transaction `STRUST`.

2. Create your own PSE (for example, Client SSL Standard) and then generate a certificate sign request.
3. Export the certificate sign request as a `*.csr` file.
4. Arrange for the certificate to be signed by a trusted certificate authority (CA).

   If you are using a client certificate, this must be signed by one of the root certificates supported by the load balancer. A self-signed certificate is not suitable. For more information, see Load Balancer Root Certificates Supported by SAP.

   The CA may have specific requirements and request company-specific data, they may also require time to analyze your company before issuing a signed certicate. When signed, the CA provides the certificate for import.
5. Navigate to the PSE for **SSL Client Standard** and open it by double-clicking the PSE.
6. Switch to edit mode.
7. Choose the *Import certificate* button.
8. In the *Import Certificate* dialog box, enter or select the path to the CA-signed certificate and choose *Enter*. The certificate is displayed in the *Certificate* area.
9. Choose *Add to Certificate List* to add the signed certificate to the *Certificate List*.

   Ensure that you import the CA root and intermediate certificates to complete the import.
10. Save your entries.

    The certificates can now be used in the SOA Manager (transaction `SOAMANAGER`).

5 Configuration Steps in SAP Cloud Integration

The following sections tell you the necessary configuration you do in SAP Cloud Integration.

5.1 General Information

The package **SAP Document and Reporting Compliance: Electronic Payroll for Colombia** contains the following integration flows:

Integration flows for Document and Reporting Compliance for Colombia

Integration Flow Name in WebUI	Project Name/Artifact Name
Send Payroll	com.sap.GS.Colombia.SendPayroll
Receive Payroll	com.sap.GS.Colombia.ReceivePayroll
Get Payroll Status	com.sap.GS.Colombia.GetPayrollStatus

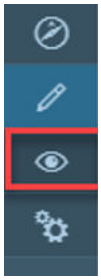
5.2 Deploying Key Pairs

Context

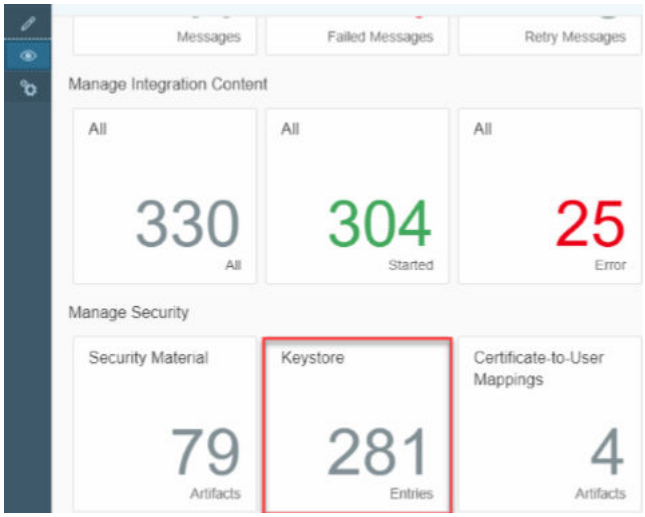
You deploy the key pairs to the SAP Cloud Integration tenants.

Procedure

1. Go to overview tab by clicking on the following button.



2. Open Keystore as shown as follows.

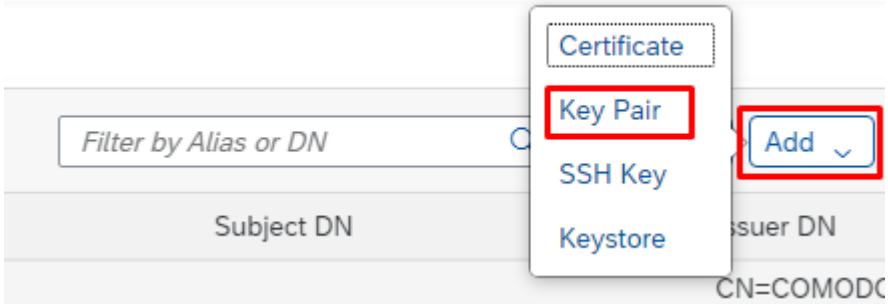


3. Deploy the Key Pair (as private key with alias) in the tenants JAVA_KEYSTORE.

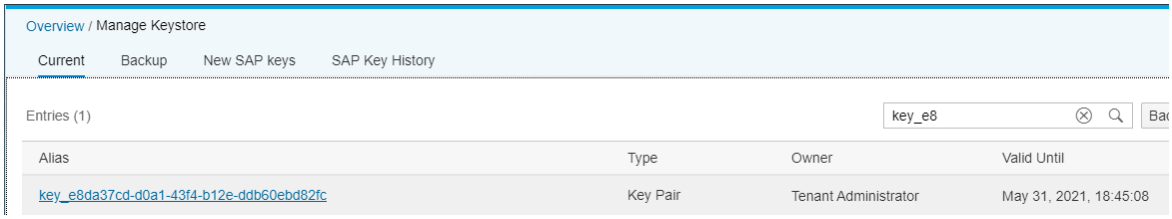
   To allow the integration flows to be updated with minimal adaptation effort, use the alias for the private key as follows: Private Key alias (relevant only for all integration flows): key_(SoftwareID of company that created electronic document). Example: key_e8da37cd-d0a1-43f4-b12e-ddu60ehd82fc

   > **i Note**
   >
   > Private key alias should be created for all unique software ID's used in customer's back-end system.

4. Deploy the key pair which is generated in the step above.
5. Go to *Add* > *Key Pair* to add the new Key Pair to the list.



6. Enter the Alias, File and key pair and password to connect to DIAN.



Complete the information related to your key pairs provided by DIAN:

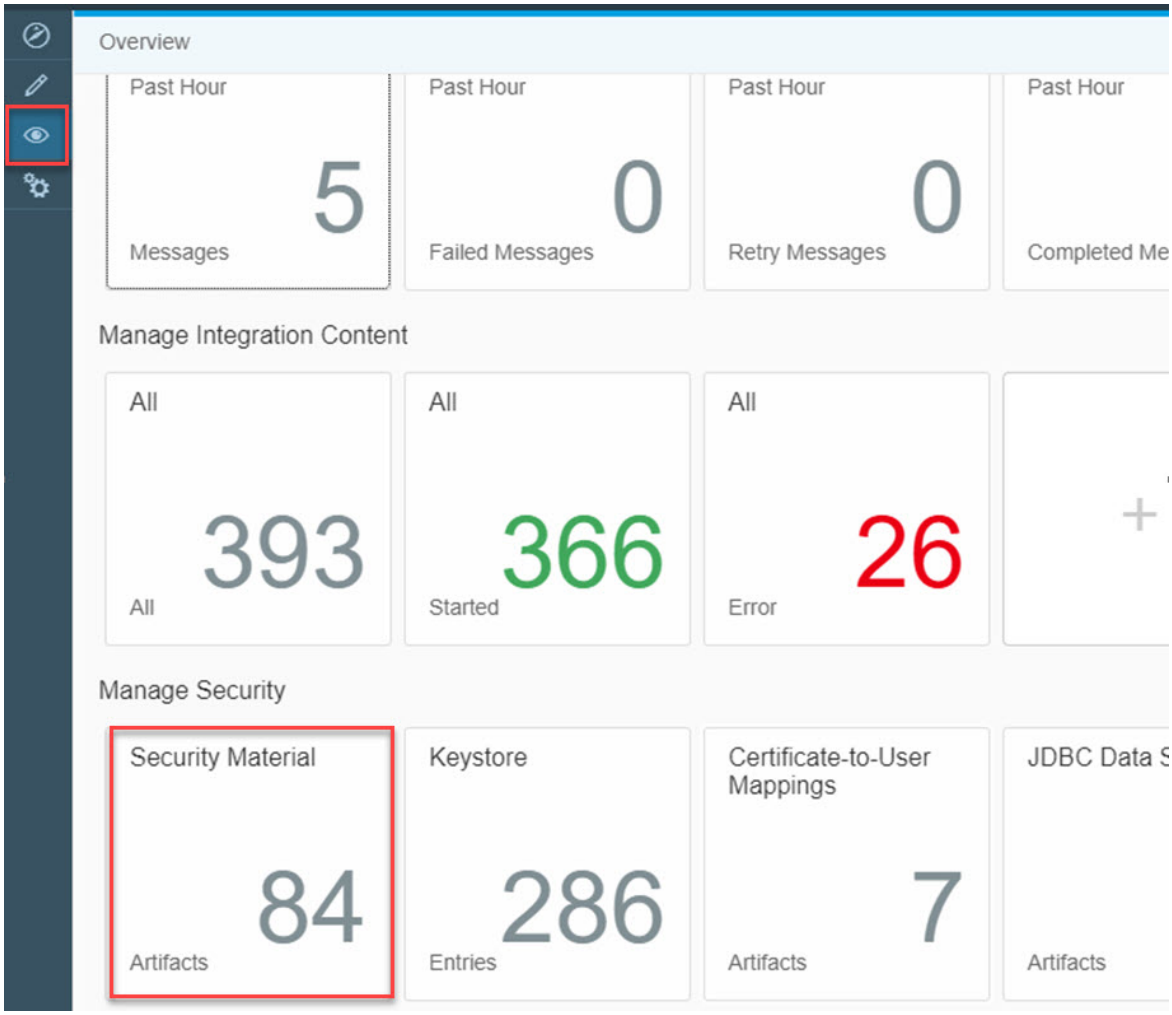
5.3 Deploying Secure Parameters

Context

You deploy the secure parameters to the SAP Cloud Integration tenants.

Procedure

1. In the *Overview* tab, choose *Security Material*.

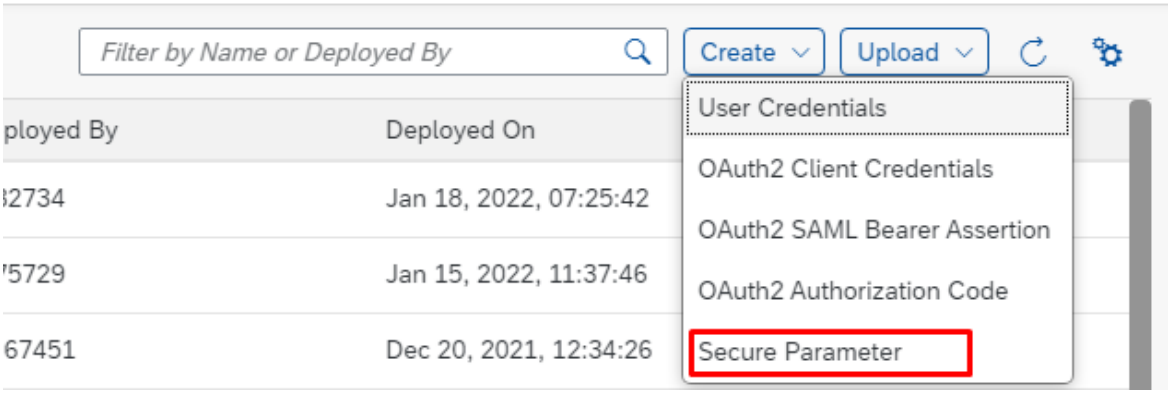


2. Deploy the Secure Parameter in the tenants JAVA_KEYSTORE.

   To allow the integration flows to be updated with minimal adaptation effort, use the alias for the secure parameter as follows: Secure Parameter alias: edoc_co_setid_(SoftwareID of company that created electronic document). Example: edoc_co_setid_e8da37cd-d0a1-43f4-b12e-ddu60ehd82fc

   > **i Note**
   >
   > Secure Parameter alias should be created for all unique software ID's used in customer's back-end system.

3. Deploy the Secure Parameter which is generated in the step above.
4. Go to Add Secure Parameter to add the new secure parameter to the list.



5. Enter the name of Secure Parameter as provided in example, and fill Secure Parameter field with the test Set ID provided by DIAN for habilitation mode.

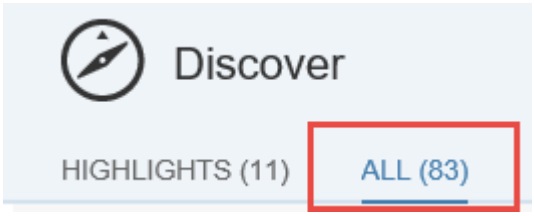
5.4 Copying Integration Flows

Context

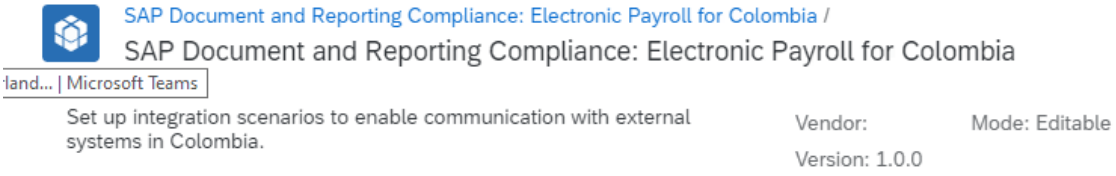
Copy all integration flows in the package SAP Document and Reporting Compliance: Electronic Payroll for Colombia to the target tenant as follows:

Procedure

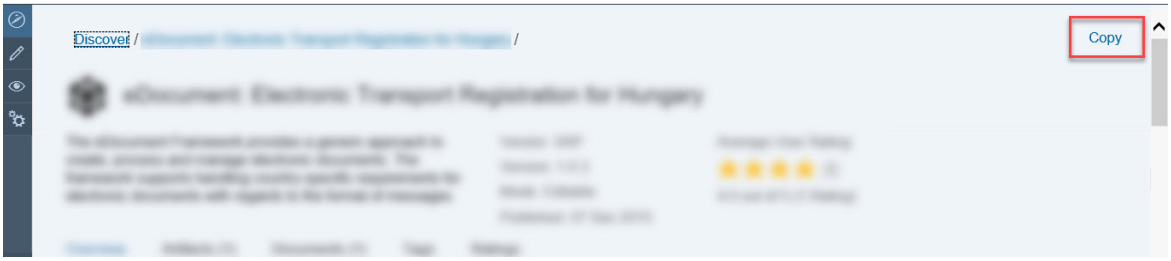
1. In your browser, go to the WebUI of the tenant (URL: <Tenant URL>/itspaces/#shell/catalog).
2. Choose *Discover* > *All* > .



3. Search for **SAP Document and Reporting Compliance: Electronic Payroll for Colombia**.



4. Select the Package and choose *Copy*.



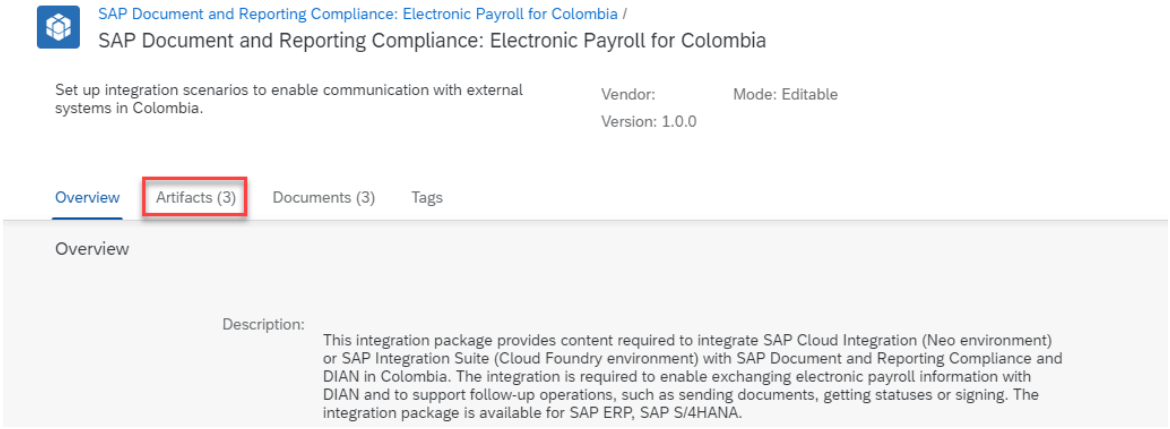
5.5 Configuring Integration Flows

Context

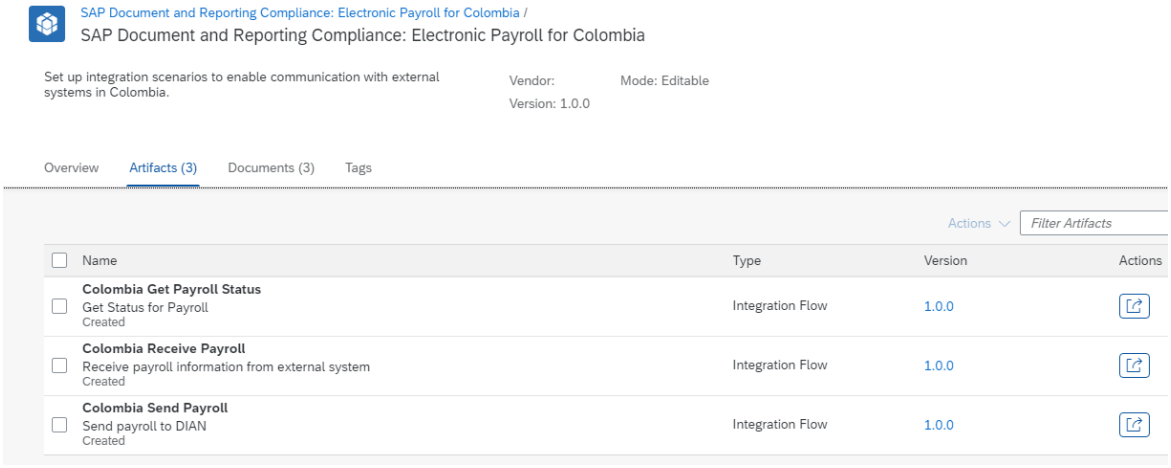
You configure the package that you have copied as described in Copying Integration Flows [page 15].

Procedure

1. There are 4 *Artifacts* in the integration package SAP Document and Reporting Compliance: Electronic Payroll for Colombia:
   - Colombia Get Payroll Status
   - Colombia Receive Payroll
   - Colombia Send Payroll
2. Go to the previously imported package on the Design tab and open *Artifacts*.

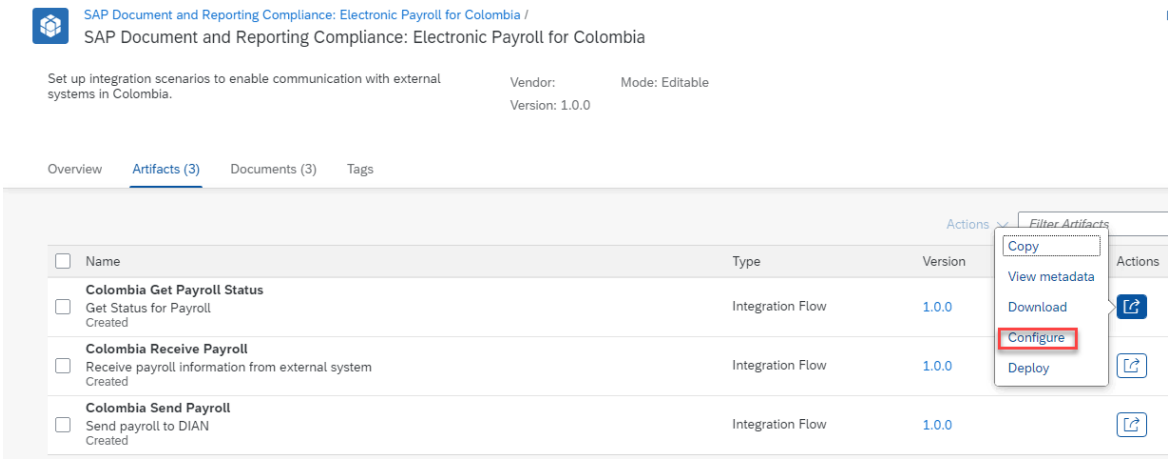


3. Choose either *Actions* > *Colombia Get Payroll Status*, *Colombia Receive Payroll*or *Actions* > *Colombia Send Payroll*, depending on which artifact you are configuring.



> **i Note**
>
> The version of the integration on the screenshot may differ from the one in your tenant.

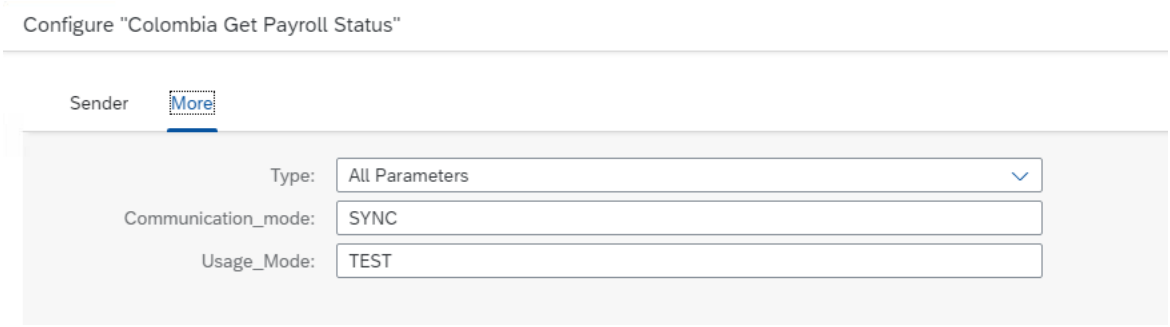
4. When you configure the *Colombia Get Payroll Status* integration flow, for example, choose *Actions* > *Configure* to open configuration for it.



5. Choose *Configure* > *Sender* tab.

   Use the *Address* parameter to set up the integration package address.

6. Choose *Configure* > *More* tab. You maintain the following values:



7. Define the value in the following fields as required.

Field	Explanation
Communication_mode	Define the mode of communication with the tax authority. Possible values are SYNC or HABILITATION.
Usage_Mode	**i Note** Required only for the Get Status artifact. Possible values are TEST or PROD.

i Note

The values of *Communication_mode* have their own functionality as shown in the table below.

Functionality of Three Communication_mode

Communication_mode	Description
SYNC	You submit documents and get responses immediately in one call (approval, rejection, etc).
HABILITATION	When customer is ready with tests, it is possible to switch to habilitation mode in order to submit 100 documents successfully and later go to production.

8. Repeat the same steps above (starting from step 3) for the *Colombia Receive Payroll* and *Colombia Send Payroll* integration flows changing only the value in Address respectively. Whene configuring the *Colombia Receive Payroll* integration flow, ensure that you configure the Address for all sender adaptors from the dropdown list separately.

5.6 Deploying Integration Flows

Shows you how to deploy the integration flows.

Context

Procedure

Choose *Save* and *Deploy* to deploy it actively to server. Note down the URLs of the endpoints for each service.

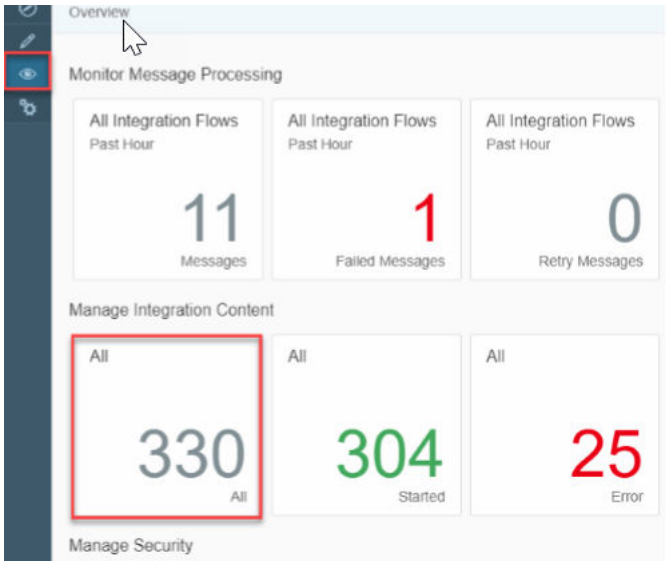
> **i** Note
>
> Depending on the version of your tenant, after pressing these buttons, a warning messages can appear. You can ignore these messages by choosing *Close* . The first two warnings are related to the payload attachments; currently the Colombia Electronic Payroll process does not support or require message attachments in any stage of processing and communication.

5.7 Copying Addresses for SOAMANAGER

You copy addresses for integration flows for the preparation for the configuration for SOAMANAGER.

Procedure

1. Go to SAP Cloud Integration content.



2. Copy address for all deployed artifacts and get status integration flow. Later you can use these addresses in the configuration for SOAMANAGER.

6 Configuration Steps in Back-End Systems

The following sections tell you the necessary configuration you do in SAP back-end systems to connect with SAP Cloud Integration.

6.1 Creating Logical Ports in SOAMANAGER

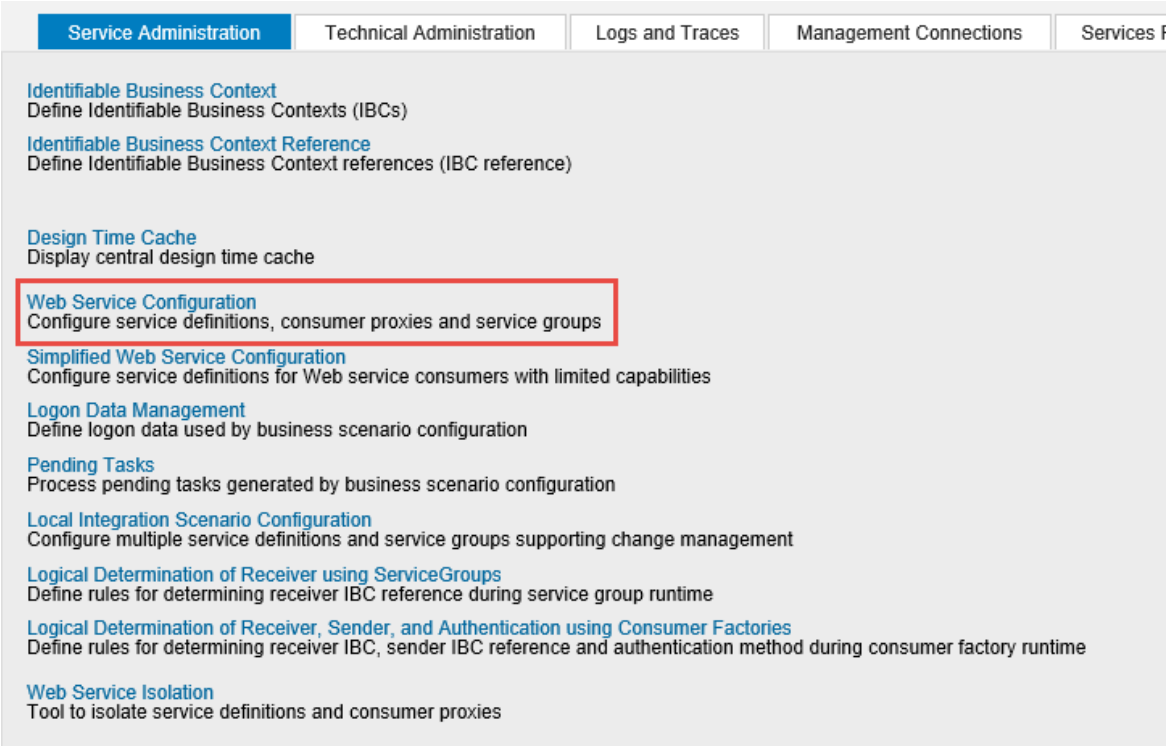
Context

You configure proxies which are needed to connect to the SAP Cloud Integration tenant via logical ports. In test SAP back-end systems, the logical ports are configured to connect to the test tenant. In productive SAP back-end systems, the logical ports are configured to connect to the productive SAP Cloud Integration tenant.

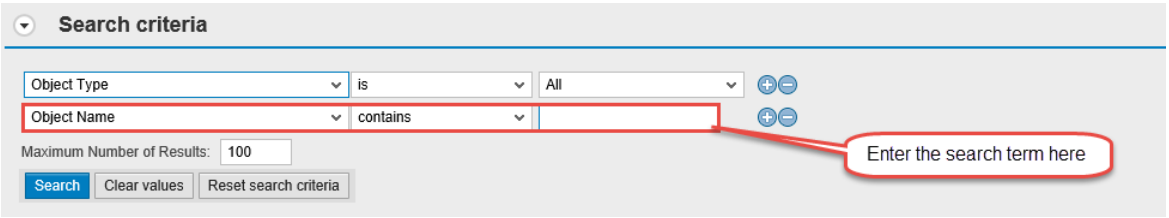
> **i** Note
>
> Depending on your release, the look-and-feel of the screens in your system may differ from the screenshots displayed below.

Procedure

1. In your SAP back-end system, go to the `SOAMANAGER` transaction and search for *Web Service Configuration* .



2. Find the proxies for eDocument for Colombia with search term `CO_EDO_CO*`.



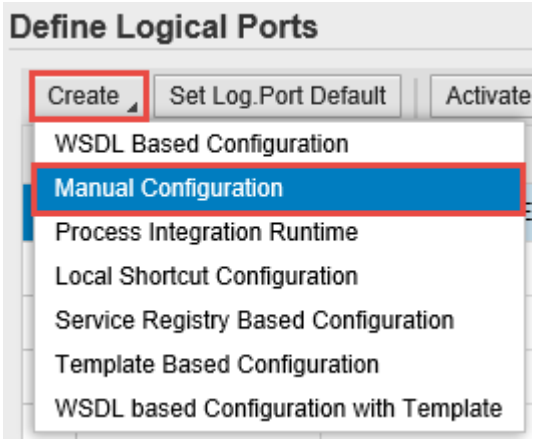
The following table lists the proxies and the logical port name, description and path for each proxy.

List of Proxies, Logical Port Names, and Paths

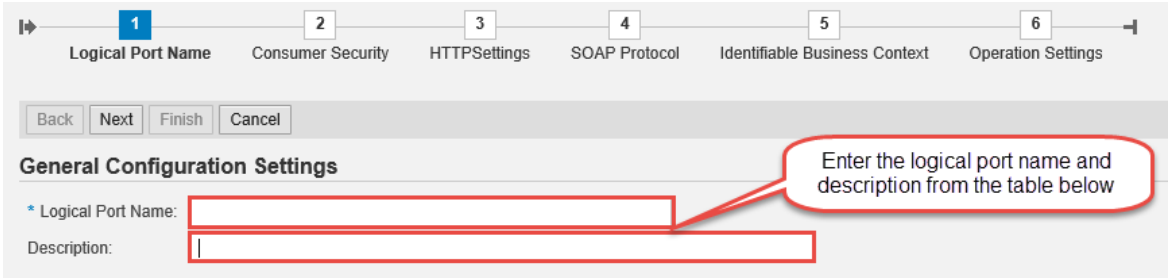
Proxy Name	Logical Port Name	Description	Path
CO_EDO_CO21_SEND_PAYROLL	EDO_CO_SEND_PAYROLL_V_1_0	Colombia eDocument – Send Payroll Transmission Service	/cxf/ColombiaSendPayroll
CO_EDO_CO21_RECEIVE_PAYROLL	EDO_CO_DELETE_PAYROLL_V_1_0	Colombia eDocument – Delete Payroll Transmission Service	/cxf/ColombiaDeletePayroll
CO_EDO_CO21_RECEIVE_PAYROLL	EDO_CO_PULL_PAYROLL_V_1_0	Colombia eDocument – Pull Payroll Transmission Service	/cxf/ColombiaPullPayroll

Proxy Name	Logical Port Name	Description	Path
CO_EDO_CO21_GET_PAY-ROLL_STATUS	CO_EDO_CO21_GET_PAY-ROLL_STATUS	Colombia eDocument – Get Payroll Status Transmission Service	/cxf/ColombiaGetPayroll-Status

3. In the *Result List*, select a proxy and create a logical port for each proxy. Choose *Create* > *Manual Configuration*.

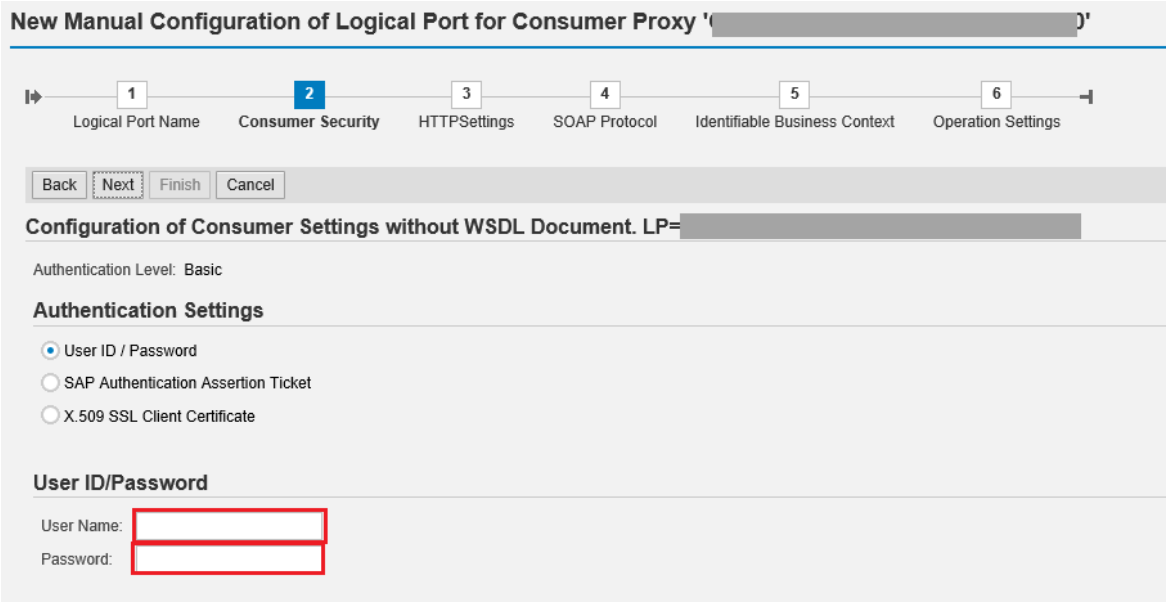


4. Enter the logical port name and a description.



5. The configuration you do in the *Consumer Security* tab in the *Configuration* screen depends on the security being used in the communication between the SAP back-end system and SAP Cloud Integration.
   a. If you use the basic authentication, select the *User ID / Password* and enter *User Name* and *Password*.
   a. If you use certificate-based authentication, select *X.509 SSL Client Certification*. Ensure that the required certificates are available in the `STRUST` transaction.

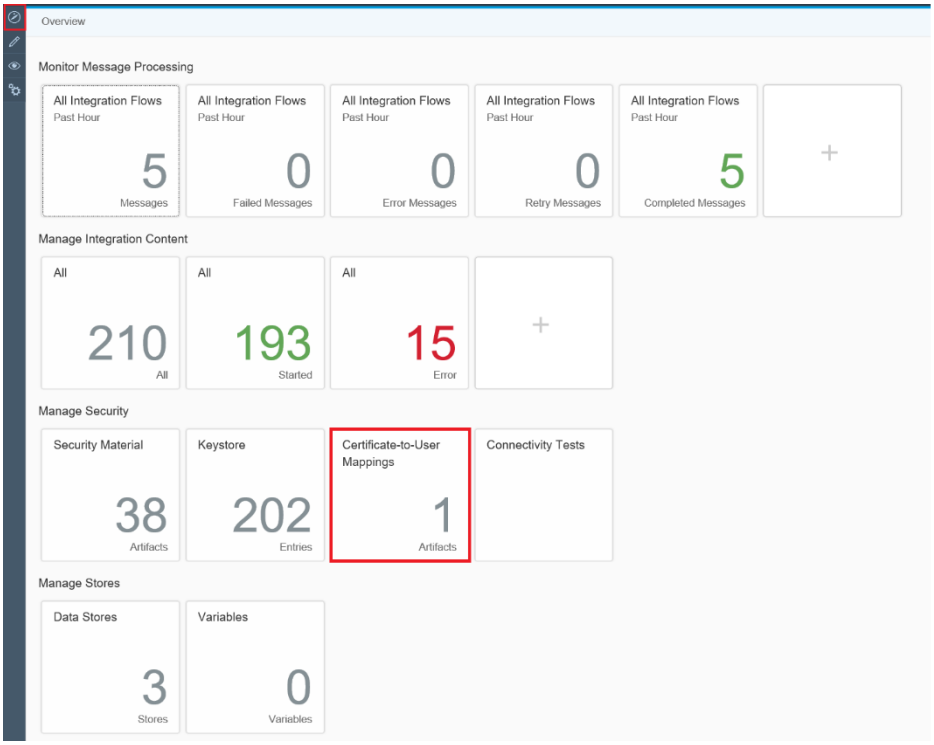
      Note: If you do not see this option or cannot select it, check the SAP Notes 2368112 and 510007



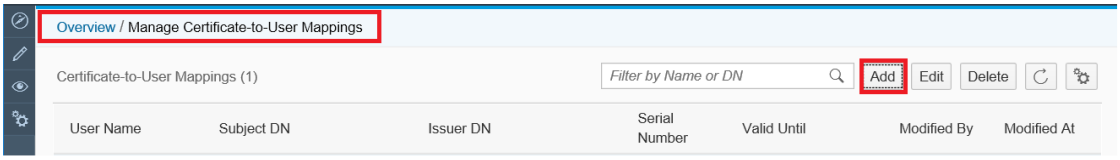
Additionally, you map the certificate to a user of your tenant with the `ESBMessaging.send` role. First, you export the certificate from the `STRUST` transaction. Save it locally and upload it to SAP Cloud Integration in the `Certificate-to-User Mappings`

a. Export the SSL Client PSE of the `STRUST` transaction.

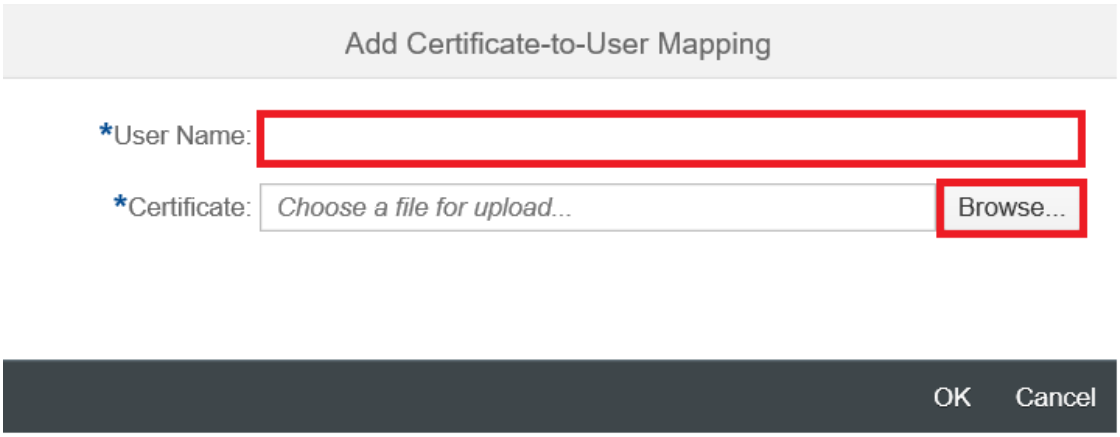
b. Go to SAP Cloud Integration under *Overview* > *Certificate-to-User Mappings*



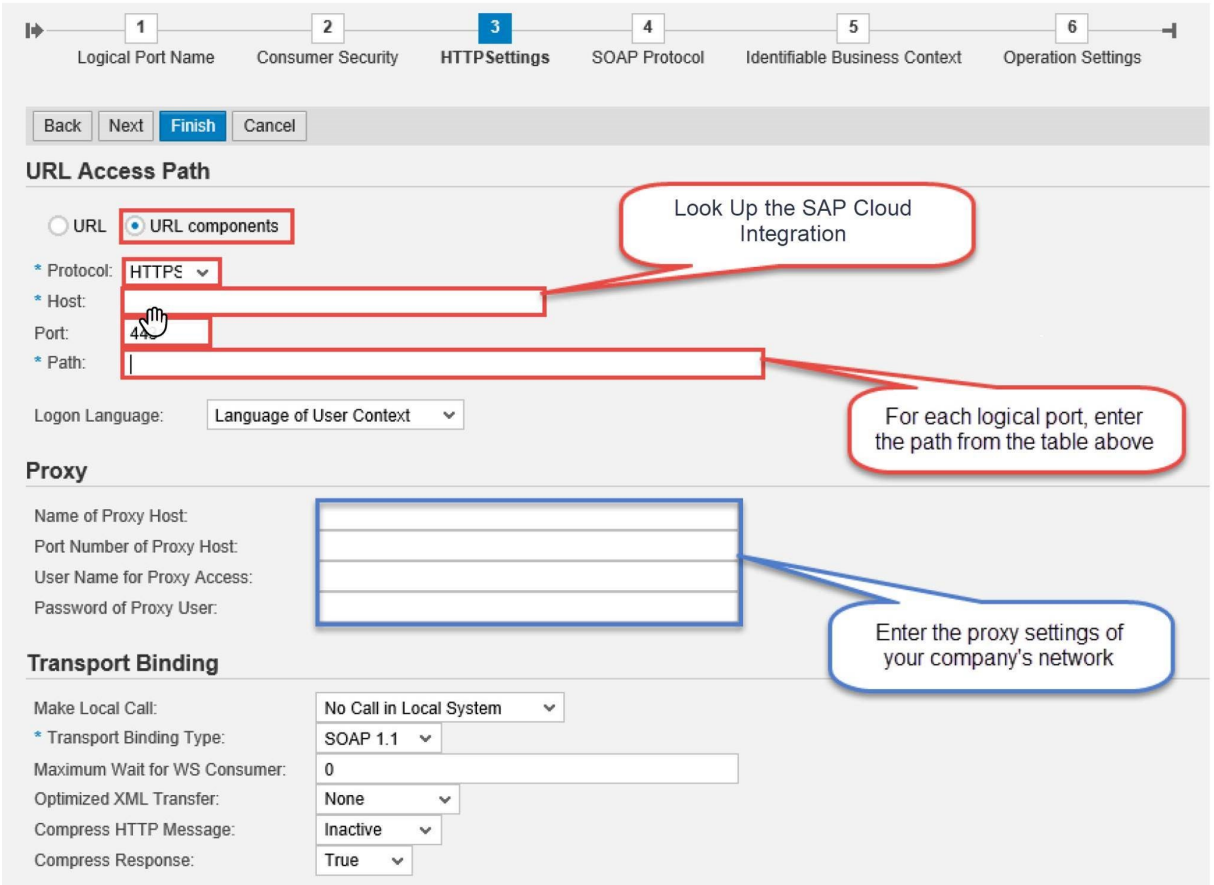
a. Choose *Add*.



b. Enter a user name with `ESBMessaging.send role`, upload the `SSL Client PSE` of the `STRUST` transaction and choose *OK*.

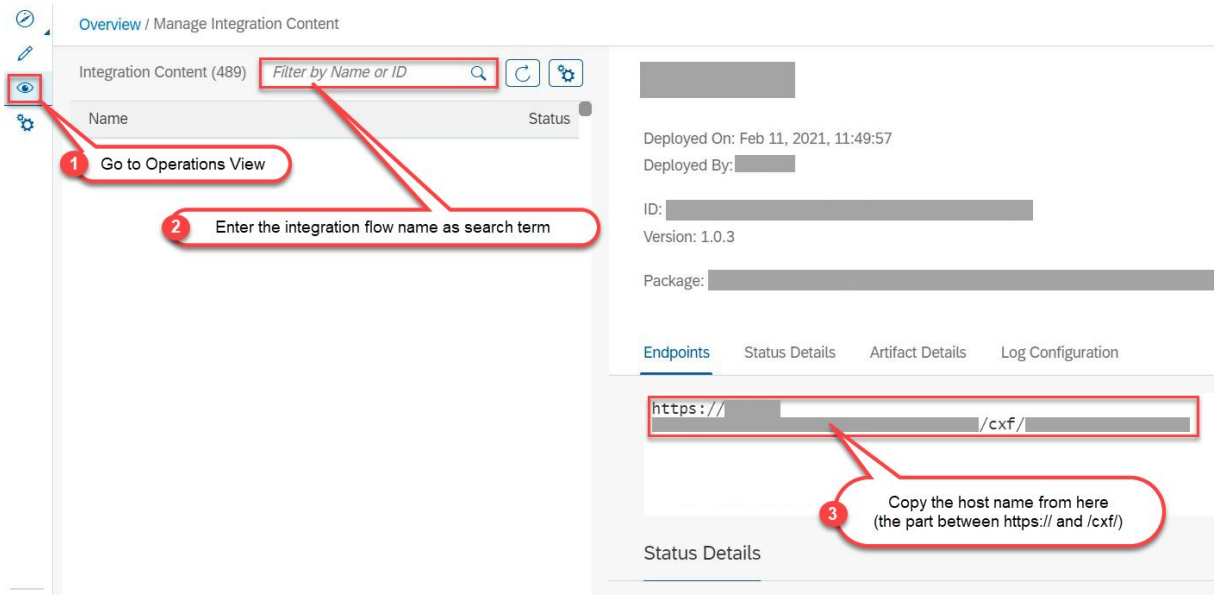


6. On the *HTTP Settings* tab, make the following entries:



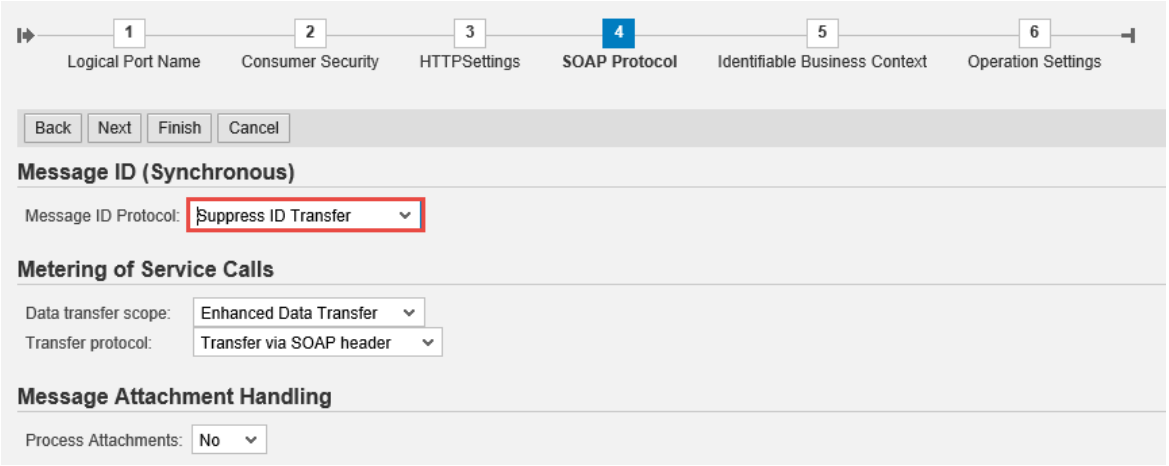
Port 443 is the standard port for the HTTPS protocol.

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



> ### Note
>
> 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.

7. On the *SOAP Protocol* tab, set *Message ID Protocol* to *Suppress ID Transfer*.



8. No settings are required in the *Identifiable Business Context* and *Operation Settings* tabs. Just select *Next* > *Finish*.

   SAP Cloud Integration does not support WebService Pin for testing your configuration.

   You can set up a HTTP connection in the `SM59` transaction. Maintain a host and a port of SAP Cloud Integration service and execute a connection test. In case of a successful connection, you receive an error with HTTP return code 500.

   Remember to create logical port(s) for each proxy and to execute the following steps in the SAP back-end systems, see SAP Note 2476827 for more information.

- Define the SOA service names and assign the logical ports to the combination of a SOA service name and a company code in `EDOSOASERV` view.
- Assign the SOA service names you created before to an interface ID in `EDOINTV` view

7 Testing the Integration

Describes the steps to test the integration of SAP Document and Reporting Compliance (eDocument) with the integration scenario from SAP Cloud Integration.

Context

The best way to test if the integration works is to submit an eDocument from SAP backend system and see if that reaches the destination system, typically the tax authority's system.

Procedure

1. In the back-end system, go to the *eDocument Cockpit* (EDOC_COCKPIT) transaction, in the relevant process.
2. Select an eDocument and check the status of the eDocument in the Cockpit and perform the following actions, accordingly:
    - If the status of the eDocument is `Created`, the eDocument was created but not submitted yet. In this case, select it and choose *Submit*. This action triggers the creation of the XML and the subsequent communication with SAP Cloud Integration.
    - If the status is green or yellow, but not `Created`, the communication with SAP Cloud Integration was triggered and was probably successful. You can double-check if the message went through on the SAP Cloud Integration tenant. Alternatively, you can use a trace from the `SRT_UTIL` transaction to look at the XMLs transmitted via web services from the SAP back-end systems.

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