



Integration Guide | PUBLIC
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Italy elnvoice: Setting up SAP Integration Suite (SAP S/4HANA Cloud) - Cloud Foundry Environment

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1 Introduction

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

The setup steps are typically done by an SAP Integration Suite consulting team, which is responsible for configuring the SAP S/4HANA Cloud tenant and the connection with SAP Integration Suite. This team may be also responsible for maintaining the integration content and certificates/credentials on the SAP Integration Suite tenant.

i Note

Although the service name **SAP Integration Suite** is used in the guide title and throughout the guide, this guide **also applies to SAP Cloud Integration running in the Cloud Foundry environment**. If you were onboarded before July 2020, the service you use is SAP Cloud Integration. The initial setup steps for the two services are different, while the integration flow settings and configuration steps in your back-end system are the same. See the **Prerequisites** section for their respective initial setup steps.

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 Integration Suite tenant. It may happen, however, that in the SAP S/4HANA Cloud tenant 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 S/4HANA Cloud documentation and to the relevant tax authority information, respectively.

2 Prerequisites

Before you start with the activities described in this document, ensure that you have set up your tenant as follows:

- If you have subscribed to Process Integration, perform all the initial setup steps described in [Initial Setup of SAP in Cloud Foundry Environment](#).
- If you have subscribed to Integration Suite, perform all the initial setup steps described in [Initial Setup](#).

i Note

SAP Document and Reporting Compliance requires the **Cloud Integration capability**. You need to activate this capability in the step **Provisioning the Capabilities**.

3 Connectivity Steps

3.1 Set Up Aruba Connection

You use the SAP Integration Suite tenants to store and manage the certificates required to support connectivity between the Aruba signing service and SAP Integration Suite.

Context

These tasks **only** apply to domestic companies that use Aruba signing services; these companies must create aliases and deploy the Aruba service integration flow for the production tenant.

Create Aliases and their Credentials

Context

In order to configure Aruba's digital signature in SAP Integration Suite, you need to create two aliases for each VAT within your productive tenant, and assign their credentials.

The aliases are:

- signatory `edoc_italy_aruba_prod_<VAT_code>`
- delegate or technical user `edoc_italy_aruba_deleg_prod_<VAT_code>`

The user will be taken from the credential `edoc_italy_aruba_prod_{IVA}`.

i Note

The credentials must be set without the [@faSAP](#) domain.

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.

- Use the tenant URL you created as defined in the prerequisites of this document. The URL has the following format: <https://<tenant>.cfapps.<data center>.hana.ondemand.com>, where <tenant> corresponds to the dynamic part and is unique for each subaccount and <data center> corresponds to the data center you are using.
- Navigate to the *Manage Security* section, and choose *Security Material*.

Overview / Manage Security Material		
Security Material (3)		
Name	Type	Status
edoc_italy_aruba_prod	Credentials	Deployed
edoc_italy_aruba_test	Credentials	Deployed

- Choose *User Credentials* and enter the following data:.



Field	Entry
<i>Name</i>	edoc_italy_aruba_prod_<VAT_code> , where <VAT_code> is the company's VAT on the SAP production system
<i>Description</i>	Enter the name of the signatory for example, Maria Rossi .
<i>User</i>	Enter the username of the signatory released by Aruba, without the @faSAP suffix. For example, if the signatory's username is abcdef50a20e435q@faSAP , then you enter abcdef50a20e435q
<i>Password</i>	Enter a dummy password, e.g. 1234567 .

- Choose *Deploy* to save the changes.
- Repeat the steps using the delegate alias to create a delegate (edoc_italy_aruba_deleg_prod_<VAT_code>) or a technical user (edoc_italy_aruba_test_<VAT_code>).

Retrieve and Save the Transport Certificates

Procedure

- Copy the URLs listed below, and paste them into your web browser.

Environment	URL
Test	https://arss.demo.firma-automatica.it/ArubaSignService/ArubaSignService 
Production	https://arss-sap.actalis.it/ArubaSignService/ArubaSignService 

- When prompted by the *Website Identification* window, choose *View certificate*.
- Select the root certificate, and then choose *Export to file* to save the certificate locally.

4. Repeat these steps for each unique root, intermediate and leaf certificate, and repeat for both your test and production tenants.

Upload the Certificates to the Keystore

Procedure

1. Access SAP Integration Suite.
2. Navigate to the *Manage Security* section, and choose *Keystore*.
3. Choose *Certificate* and import all the transport certificates.
4. Save your entries.

3.2 Registration at Tax Authorities

To send and receive invoices through the Exchange System (Italian: Sistema de Interscambio, SdI) of the Italian tax authorities, your company needs to register two web-service channels for the SDICoop Service on their official website. You use these channels for the following purposes:

- To send outbound invoices and outcome notifications related to inbound invoices from the eDocument Framework to the Exchange System.
- To receive inbound invoices and status notifications related to outbound invoices from the Exchange System.

i Note

Multiple companies in a group can share a channel, and send all invoices through the registered channel to SdI.

To complete communication channel registration at the Italian tax authorities, see SAP Note [2583309](#).

If you are located in the extension landscape, see SAP Note [3156359](#).

i Note

You are in the extension landscape if the tenant URL fulfills the following pattern: `<xxxx-
<nnn>.hana.ondemand.com....>` where `<nnn>` is any numeric value.

You need to complete the steps outlined in the **Communication Channel Registration** document, including:

- Generate certificate signing requests (CSRs) for both outbound and inbound communications
- Create the channel registration request
- Sign and send the request

3.2.1 Deploying Key Pairs, Certificates and Credentials

Context

When registration with the Exchange System (Italian: Sistema de Interscambio, SdI) is successful, you will receive an email to your CEM (Italian: Posta Elettronica Certificata PEC) address confirming that the channel has been registered.

Additional steps are required for inbound and outbound communication security. This involves deploying the key pairs, certificates and the credentials to the SAP Integration Suite tenants.

To finalize communication channel registration at the Italian tax authorities, see SAP Note [2583309](#). You need to complete the steps outlined in the **Communication Channel Registration** document, including:

- Sign and send the request
- Understand the information received from the SdI
- Upload security elements to SAP Integration Suite keystore
- Configure SSL host-owned signed certificate
- Add tax authority (Italian: Agenzia Delle Entrate) certificates to the SSL host
- Create custom domains
- Add the certificate-to-user mapping

Create Aliases and their Credentials

Context

In the [Registration at Tax Authorities \[page 7\]](#) task, you registered a communication channel for the company. Now, you create aliases for each key pair, and upload the credentials for the company to the productive tenant.

Two aliases (and their credentials) are required for each VAT within your productive tenant. Create the alias for the key pair according to the following naming convention:

- Non-production environment, `edoc_italy_key_test_<VAT_code>*`
- Production environment, `edoc_italy_key_prod_<VAT_code>*`

* You can use the same communication channel registration for multiple VAT codes. In that case, add to your test/productive tenant the same key-pair multiple times using corresponding VAT-code specific aliases

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.

- Use the tenant URL you created as defined in the prerequisites of this document. The URL has the following format: `https://<tenant>.cfapps.<data center>.hana.ondemand.com`, where <tenant> corresponds to the dynamic part and is unique for each subaccount and <data center> corresponds to the data center you are using.
- Navigate to the *Manage Security* section, and choose *Keystore*.
- Select *Add* and choose *Key Pair*:

Field	Entry
<i>Alias</i>	<code>edoc_italy_key_test_<VAT_code></code> , where <VAT_code> is the company's VAT on the SAP production system.
<i>File</i>	Choose the signed client key with appended caentrate certificate in .p12 format.
<i>Password</i>	Enter the password for the file.

i Note

Use the file and password that you have created in the process described in the **Communication Channel Registration** document.

- Choose *Deploy* to save the changes.
- Repeat the steps for each alias.
- Deploy the public certificates and the root certificates of the Exchange System in the keystore. You download them from the Exchange System website in the *Manage the Channel* section after you have successfully registered the registration channel.

4 Configuration Steps in SAP Integration Suite

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

4.1 General Information

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

Integration Flows for Document and Reporting Compliance for Italy

Integration Flow Name in WebUI	Project Name/Artifact Name
Italy Receive Invoice	com.sap.GS.Italy.ReceiveInvoice
Italy Receive Notification	com.sap.GS.Italy.ReceiveInvoiceNotification
Italy Send Invoice	com.sap.GS.Italy.SendInvoice
Italy: Send Outcome Notification	com.sap.GS.Italy.SendOutcomeNotification
Italy: Sign Service Aruba	com.sap.GS.Italy.SignServiceAruba
Italy Xml to Html Transformation	com.sap.GS.Italy.XmlToHtml

4.2 Deploying Key Pairs, Certificates and Credentials

Context

You deploy the key pairs, certificates and the credentials to the SAP Integration Suite tenants.

Procedure

1. As part of the channel registration procedure, you have created a keystore.jks file with the private key. Deploy the keystore file in the tenant's keystore.

In the registration procedure, you have registered a communication channel per tax code. You must upload the keystore.jks file for each tax code to the keystore of the tenant. Create the alias for the key pair according to the following naming convention:

Value	Description
edoc_italy_key_test_< tax code>*	Non-productive environment
edoc_italy_key_prod_<tax_code>	Production environment

* You can use the same communication channel registration for multiple VAT codes. In that case, add to your test/productive tenant the same key-pair multiple times using corresponding VAT-code specific aliases.

2. Deploy the public certificates and the root certificates of the Exchange System in the keystore. You download them from the Exchange System website in the Manage the Channel section after you have successfully registered the registration channel.
3. If you are using the Aruba Sign Service, you must upload the certificates from the test URL as well as the productive URL:
 - Test URL: <https://arss.demo.firma-automatica.it/ArubaSignService/ArubaSignService>
 - Productive URL: <https://arss-sap.actalis.it/ArubaSignService/ArubaSignService>
 1. Look for certificates directly in the browser where you opened the above mentioned URL.
 2. Select the root certificate and download it from the browser.
 3. Upload the certificates to the keystore in your tenant.
4. Go back to the Operations View and choose *Security Material*. Go to **Add > User Credentials** and enter the User ID and password to connect to the Aruba signing service with the following alias:

Name	Description
edoc_italy_aruba_test_<tax_code>	To use the signing service in a test environment
edoc_italy_aruba_prod_<tax_code>	To use the signing service in a productive environment
edoc_italy_aruba_deleg_prod_<tax_code>	To use the signing service in a productive environment. Delegate user and password provided by Aruba.

Overview / Manage Security Material		
Security Material (3)		
Name	Type	Status
edoc_italy_aruba_prod_	Credentials	Deployed
edoc_italy_aruba_test_	Credentials	Deployed

Complete the information related to your credentials provided by Aruba.

Add User Credentials

*Name:	<input type="text" value="edoc_italy_aruba_test_0123456789"/>
Description:	<input type="text"/>
*User:	<input type="text"/>
Password:	<input type="password"/>
Repeat Password:	<input type="password"/>

SuccessFactors

Deploy Cancel

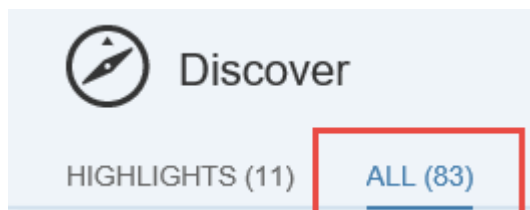
4.3 Copying Integration Flows

Context

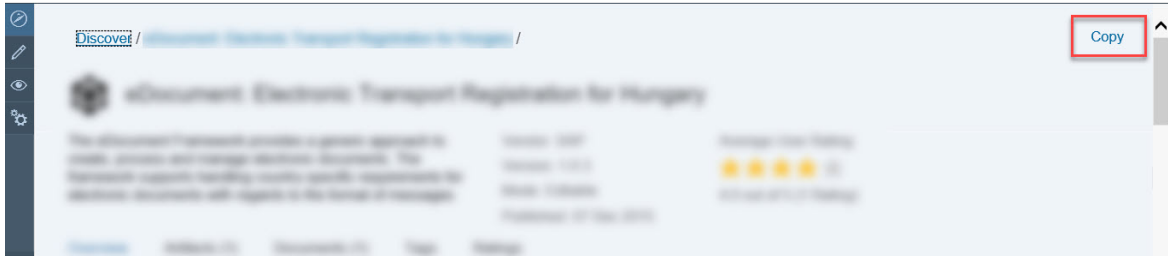
Copy all integration flows in the package SAP Document and Reporting Compliance: Electronic Invoicing for Italy to the target tenant as follows:

Procedure

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



3. Search for **SAP Document and Reporting Compliance: Electronic Invoicing for Italy**.
4. Select the Package and choose *Copy*.



4.4 Configuring Integration Flows

Context

You configure the package that you have copied as described in .

Procedure

1. There are 6 *Artifacts* in the integration package eDocument: Electronic Invoicing for Italy:
 - Italy: Receive Invoice
 - Italy: Receive Notification
 - Italy: Send Invoice
 - Italy: Send Outcome Notification
 - Italy: Sign Service Aruba
 - Italy: XML to HTML Service
2. Choose **► Actions ► Configure ►** for the artifact you are configuring.

i Note

Not all external parameters exist for each integration flow. Configure only the ones which are available.

3. Choose **► Configure ► More ►** tab (in some versions it may be *Externalized Parameters*)
 - Use the `Mode` parameter to set up the integration package usage mode:

Value	Description
TEST	To use the test system of the tax authority or the signing service.

Value	Description
PROD	To use the productive (that is, legally binding) system of the tax authority or the signing service.

- Use the `SignB2BInvoice` parameter to configure whether you want B2B invoices to be signed or not:

Value	Description
YES	The system signs B2B invoices.
NO	The system does not sign B2B invoices.

Note

The system always signs B2G invoices.

- Use the `SignServiceAdapterAddress` parameter to configure the address of the signing integration flow. Normally you don't have to change this field. It is only required in case you are using your custom integration flow to sign invoices and notifications

Configure "Italy Send Invoice"

Sender	More
Type:	<input type="text" value="All Parameters"/>
Mode:	<input type="text" value="TEST"/>
SignB2BInvoice:	<input type="text" value="YES"/>
SignServiceAdapterAddress:	<input type="text" value="/ItalySignServiceAruba"/>

4. Choose **Configure** > **Sender** tab.

- Use the `Address` parameter to set up the integration package address. Normally you don't have to change this field. In case you change the field, make sure to use the same address when configuring the logical ports in the next chapter.
- Use the `Authorization` parameter to configure the authorization type.

Value	Description
User Role	You want to use basic authentication (user/password) or client certificate authentication with Certificate-to-User-Mapping
Client Certificate	You want to use client certificate authentication without Certificate-to-User-Mapping

- Use the `User Role` parameter to configure the role based on which the inbound authorization is checked. Choose [Select](#) to get a list of all available roles.
The role `ESBMessaging.send` is provided by default.

Configure "Italy Send Invoice"

Sender More

Sender:

Adapter Type:

Connection

Address:

Authorization:

User Role:

5. 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 invoice registration process does not support or require message attachments (for example, scanned copies of invoices) in any stage of processing and communication.

4.5 Extending Integration Flow for HTML Display

Context

If you want to display the HTML in a different format than the format provided by the tax authorities, you can extend the integration flow [Italy Xml to Html Transformation](#) with your own or any other customized stylesheet. This is not a standard delivery from SAP and any derived issues are your own responsibility.

Procedure

1. Go to [Artifacts](#) > [Italy Xml to Html Transformation](#) > [Configure](#) .
2. Enter an endpoint address for your custom integration flow. The address must start with an `/`. See the example in the screenshot.

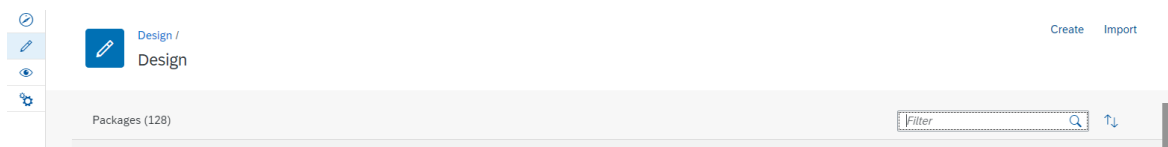
Configure "Italy Xml to Html Transformation"

[More](#)

Type:

Extension_endpoint:

- Go to the Design tab (pencil icon) and choose [Create](#).



- Specify the package information by entering a name, technical name and short description and save your entries.

[Design / New Package /](#)
Extension_package

[Header](#) [Overview](#) [Artifacts](#) [Documents](#) [Tags](#)

*Name:

*Technical Name:

*Short Description:

Version:

Vendor:

- Go to [Artifacts](#) > [Add](#) > [Integration Flow](#).

Name	Type	Version
	No data	

Add ▾ Delete Actions ▾

- Value Mapping
- OData Service
- Integration Flow

6. Specify a name, ID and description and finish it by clicking on *OK*.

Add integration flow artifact

Create Upload

Name: *

ID: *

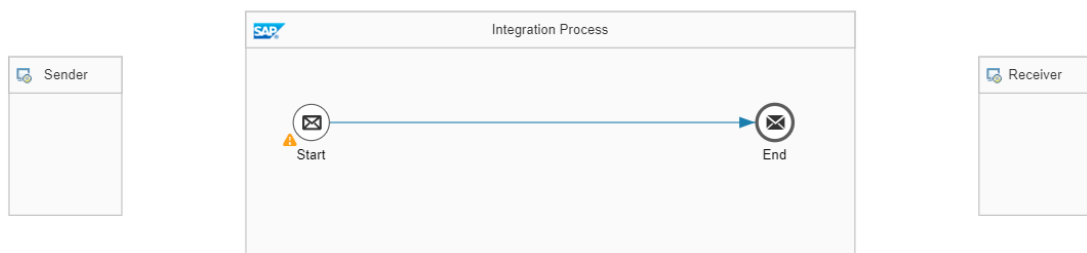
Product Profile: ▾

Description:

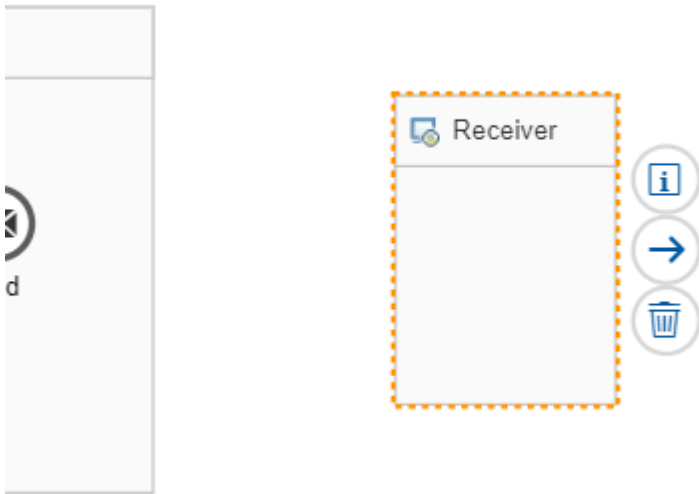
Sender: Receiver:

OK **Cancel**

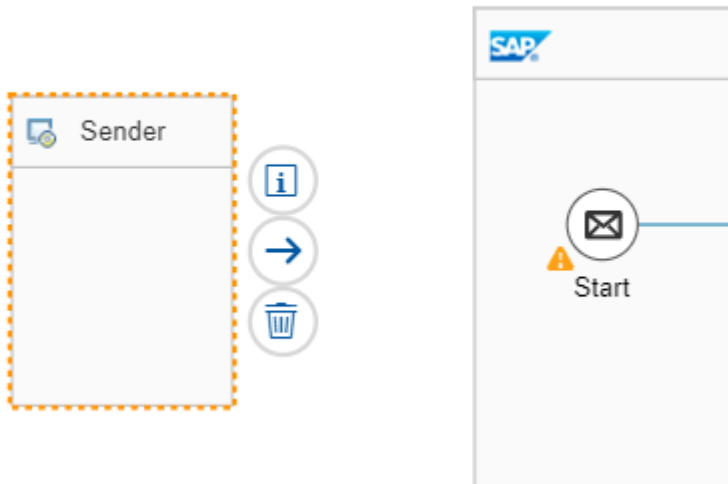
The newly created integration flow looks as follows:



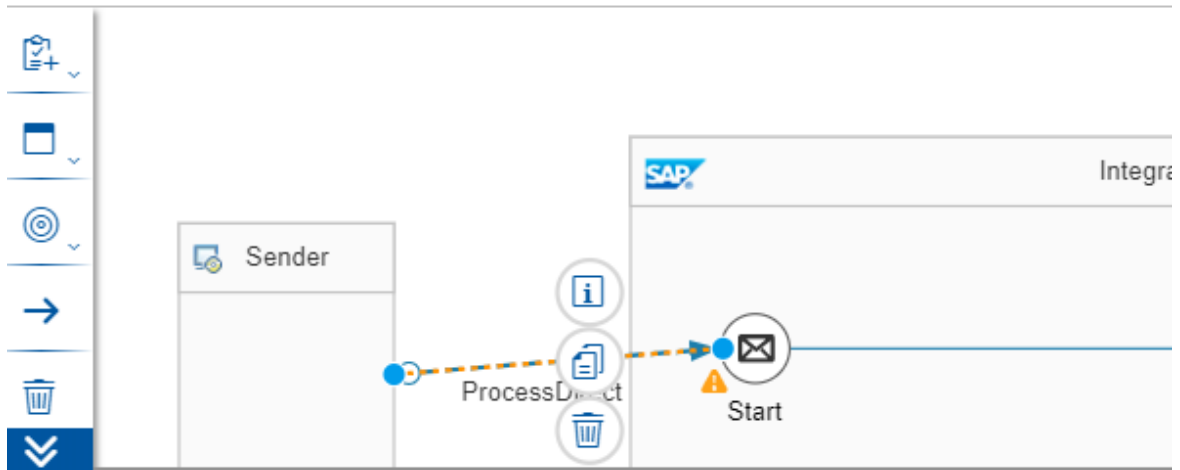
7. Go to *Edit* mode and remove the *Receiver* by clicking on the bin icon:



8. On the *Sender* side, click the arrow icon and move it to *Start* to create a connector (Process Direct adaptor) between *Sender* and *Start*.



9. Click on the connector to get the *Connection* tab.
10. Go to the *Connection* tab and in the address field, enter the endpoint name which you entered in step 2.



ProcessDirect

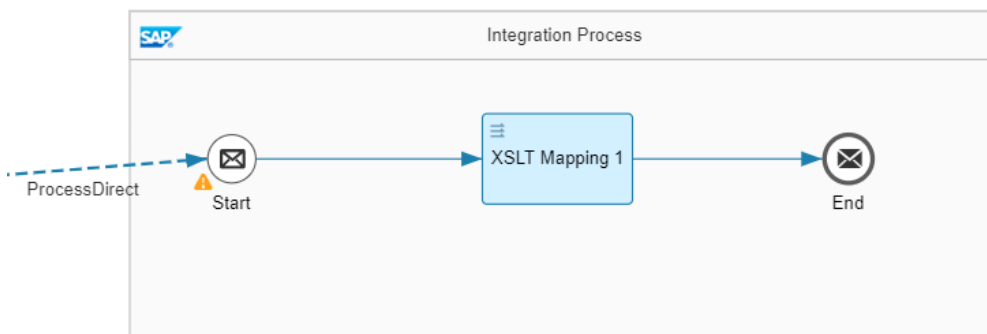
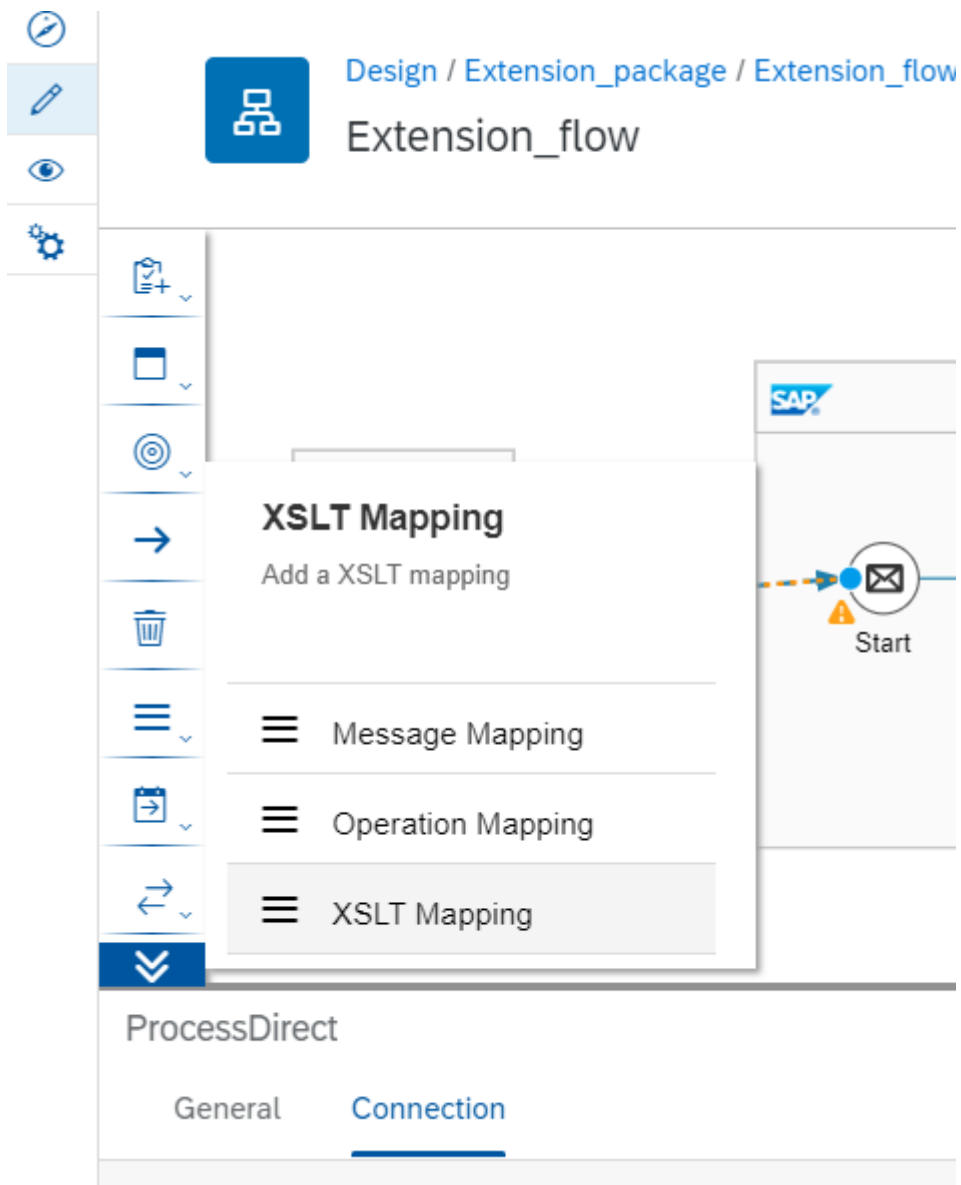
General

Connection

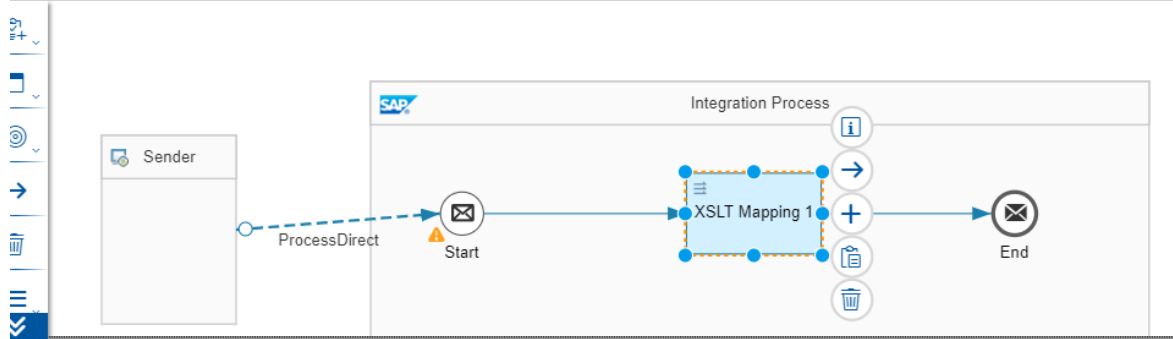
CONNECTION DETAILS

Address: *

11. From the panel on the left, choose the *XSLT Mapping* item and put it between Start and End:



12. Click on the XSLT Mapping to get the *Processing* tab.
13. Go to the *Processing* tab and click on *Select* to choose and upload a resource, your custom stylesheet, from your file system.



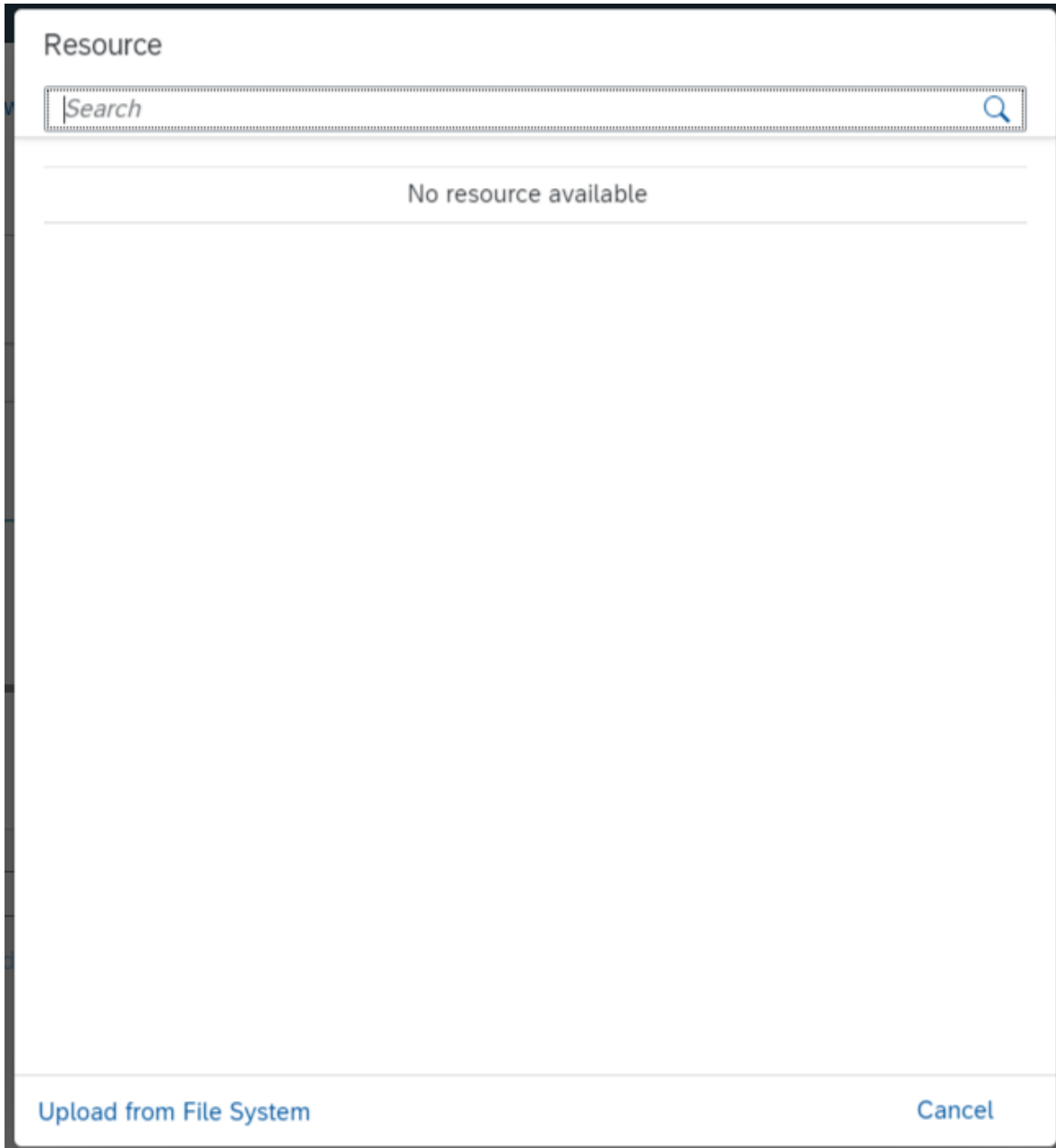
XSLT Mapping

General Processing

Source: * Integration Flow

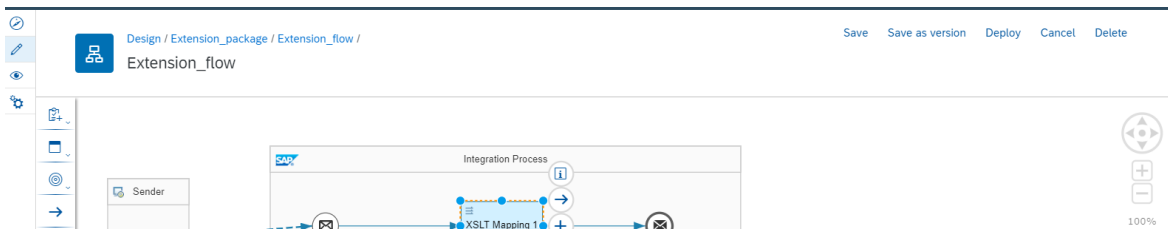
Resource: * <No resource assigned>

Output Format: Bytes



The system uploaded the selected file and shows it in the dialog box.

14. Save your entries and click on *Deploy*.



5 Configuration Steps for SAP S/4HANA Cloud

The following sections tell you the necessary configuration you do in SAP S/4HANA Cloud.

5.1 Configuring a Communication System

Create a communication system that represents your SAP Integration Suite tenant.

Prerequisites

- Live SAP Integration Suite test or productive tenant must be available.
- Communication systems and communication arrangements are not transportable. Configure them in both your quality and production systems.
- The SAP S/4HANA Cloud user, who configures communication systems and communication arrangements, must be assigned to the business catalog role `SAP_BCR_CORE_COM` (*Communication Management*) for accessing communication management apps.

Procedure

1. Log in to your S/4HANA Cloud tenant.
2. Find and launch the *Communication Systems* app. Choose *New*.



A *New Communication System* dialog box appears.

3. Create a system ID and give it a descriptive name.

New Communication System

*System ID:

*System Name:

Create Cancel

4. Choose *Create*.

An editing screen for the communication system appears.

5. In the *Technical Data* section, enter the host name and HTTPS port of your SAP Integration Suite tenant.

To find the host name for your tenant, in SAP Integration Suite, do as follows:

1. From the menu on the left, choose the *Operations* view.
2. Select *Manage Integration Content* (All).
3. Search for the integration flow for the scenario you are configuring.
4. Find the host name in the *Endpoints* tab.

The endpoint URL is a concatenation of host name and path: **https://<host name>/<path>**.

The screenshot shows the SAP Integration Suite interface. On the left, a table lists integration flows: 'Italy Receive Invoice' (Status: Started) and 'Sdl Upload App ZLIO' (Status: Started). The main area displays details for 'Italy Receive Invoice', including deployment information and a list of endpoints. The endpoint URL is shown as `https://<host name>/cxf/ItalyReceiveInvoice`.

6. In the *User for Outbound Communication* section, choose +.

Contact Information

Contact Person Name: Phone Number:

E-Mail:

OAuth 2.0 Identity Provider

Enabled:

User for Inbound Communication

Authentication Method	User Name
No data	

User for Outbound Communication

Authentication Method	User Name/Certificate/Client ID
No data	

7. Select an authentication method, which is used to connect to your SAP Integration Suite tenant. Proceed as follows:

The screenshot shows the 'New Outbound User' dialog box. The 'Authentication Method' dropdown menu is open, displaying the following options: 'User Name and Password', 'SSL Client Certificate', 'OAuth 1.0', 'OAuth 2.0', and 'None'. The 'User Name' and 'Password' fields are currently empty.

- If you select the authentication method *User Name and Password*, for *User Name* enter the value for the **clientid** and for *Password*, the value for the **clientsecret**. You create these values for your service instance in SAP Integration Suite. For more information, see [Creating Service Instances](#).

The screenshot shows the 'New Outbound User' dialog box. The 'Authentication Method' is set to 'User Name and Password'. The 'User Name' and 'Password' fields are empty. The 'Create' and 'Cancel' buttons are visible at the bottom right.

- If you select the authentication method *SSL Client Certificate*, select the *Default Client Certificate* type and choose *Create*. You must configure this certificate in SAP Integration Suite too. For that you create a service instance using the required grant_type. You create the service key using the certificate uploaded to the SAP S/4HANA Cloud. For more information, see [Defining a Service Key for the Instance in the Cloud Foundry Environment](#).

The screenshot shows the 'New Outbound User' dialog box. The 'Authentication Method' is set to 'SSL Client Certificate' and the 'Certificate Type' is set to 'Default Client Certificate'. The 'Create' and 'Cancel' buttons are visible at the bottom right.

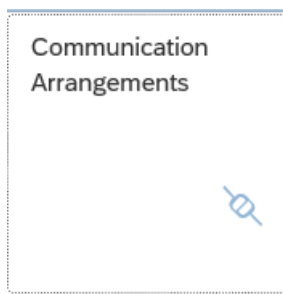
8. Choose *Save*.

5.2 Configuring Communication Arrangement

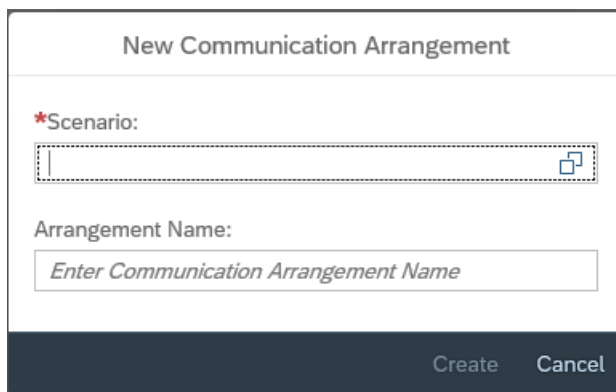
Configuration steps for SAP S/4HANA Cloud Communication Arrangement.

Procedure

1. Login to your S/4HANA Cloud tenant with the Cloud User.
2. Find and launch the application *Communication Arrangements*.



3. Choose *New*. In the new pop-up window, enter the scenario `SAP_COM_0418` (which is the one designated for communication with the tax authority via SAP Integration Suite package) and an Arrangement Name. For Communication Arrangement name it is recommended to choose a name like `SAP_COM_0418_<name of SAP Integration Suite tenant>`.

A screenshot of the 'New Communication Arrangement' pop-up window. The window has a title bar 'New Communication Arrangement'. Below the title bar, there is a field for '*Scenario:' with a dropdown arrow. Below that is a field for 'Arrangement Name:' with a placeholder text 'Enter Communication Arrangement Name'. At the bottom of the window, there are two buttons: 'Create' and 'Cancel'.

4. Choose *Create*.
5. In the new window, choose the communication system created in the previous step (for example, `EDOC_V1234`) and the authentication method, relevant to the communication system.
 - If the authentication is by User ID, then select *User Name and Password* from the *Outbound Communication* list.

Common Data

Arrangement Name: Own System:

*Communication System: [Display](#)

Outbound Communication [Download](#) [Supported Authentication Methods](#)

*User Name: Authentication Method:

6. Scroll down and enter the path part for your integration flow URL for all outbound services.

Outbound Services

▼ **Italy Delete Invoice** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

▼ **Italy Pull Invoice** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

▼ **Italy Delete Notification** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

▼ **Italy Pull Notification** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

▼ **Italy Send Invoice** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

▼ **Italy Send Notification** [Download WSDL](#) [Check Connection](#)

Service Status: Active Path:

Application Protocol: SOAP Service URL:

Port:

Italy XML to HTML Service

Service Status: Active
Application Protocol: SOAP
Port:

Path:
Service URL:



7. Choose *Save*.

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