



Integration Guide | PUBLIC
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Colombia Electronic Invoice: Setting up SAP Cloud Integration (SAP S/4HANA Cloud)

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2 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 lists the required setup steps you perform in the SAP S/4HANA Cloud system* and the 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 business system 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.

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 business system 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 business system documentation and to the relevant tax authority information, respectively.

3 Prerequisites

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

1. Configurations for Electronic Documents

For more information, see the documentation for Document and Reporting Compliance for Colombia on [SAP Help Portal](#).

2. Setup of SAP Integration Suite

Ensure that your SAP Integration Suite 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 Integration Suite 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.

3. Registration of your company on the DIAN portal.

3.1 Setup of Secure Connection

You establish a trustworthy SSL connection to set up a connection between the SAP S/4HANA Cloud tenant and the SAP Integration Suite.

Outbound HTTP connections are required, and are supported with specific, public certificates.

You use [Maintain Client Certificates](#) app 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 S/4HANA Cloud tenant.

For more information, refer to [Operations guide for SAP Cloud Integration](#).

Note

If you encounter any issues in the information provided in the SAP Integration Suite product page, open a customer incident under the `LOD-HCI-PI-OPS` component.

Client Certificate

If you're using a client certificate, this must be signed by one of the root certificates supported by the load balancer. A self-signed certificate isn't suitable. For more information, see [Load Balancer Root Certificates Supported by SAP](#).

3.2 Setup of SAP Integration Suite Tenants

SAP Integration Suite test and productive tenants are live and users in the tenants have sufficient rights to copy the integration package and to configure and deploy the integration flow.

To be able to deploy the security content, you need the `AuthGroup.Administrator` role.

For the subsequent configuration of SAP S/4HANA Cloud, note down the URL of the tenant. It is the Tenant Management (TMN) URL which you received when the tenant was provisioned.

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

3.3 Retrieve and Save Public Certificates

You perform this action in the SAP S/4HANA Cloud tenant only if you are using certificate-based authentication. Not required for basic authentication.

Prerequisites

If you do not find any integration flows in your tenant, refer to [Copying Integration Flows \[page 10\]](#) and [Configuring Integration Flows \[page 10\]](#).

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 Integration Suite.

Alternatively, use the URL emailed to you with your SAP Integration Suite 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.

3.4 Registration in Tax Authorities' System

You have completed the registration in the Colombian Tax Authority portal 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 the DIAN portal
- You find information about the authentication data on DIAN's Web page under *factura electronica*:
 - *Documentación y Normatividad* tab: Official documents and regulations
 - *Manuales y video* tab: User guides

Note

The information above mentioned is responsibility of DIAN, SAP is not liable for its correctness and accuracy.

4 Configuration Steps in SAP Integration Suite

This section describes the required configuration for SAP Integration Suite.

4.1 General Information

The package *SAP Document and Reporting Compliance: Electronic Invoice 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 Invoice	<code>com.sap.GS.Colombia.GenericInvoice</code>
Get Status	<code>com.sap.GS.Colombia.GetStatus</code>
Query Ranges	<code>com.sap.GS.Colombia.GetRanges</code>
Attached Document	<code>com.sap.GS.Colombia.Attachment</code>
Subsequent Document	<code>com.sap.GS.Colombia.SubSqntDoc</code>

4.2 Deploying Key Pairs

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

Procedure

1. Access **Monitor > Integrations and APIs** and choose *Keystore* under the *Manage Security* section.
2. Generate the key pair (as private key with alias) in the tenants.

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`

Note

You create private key alias for all unique software IDs used in the business system.

3. Deploy the key pair generated in the step above.
4. Access **► Add ► Key Pair ►** to add the new key pair to the list.
5. Fill in the information as follows:
 - *Alias*: Name of the private key you created.
 - *File*: The certificate of type key pair generated from the tax authority portal.
 - *Password*: Enter the password you received along with the certificate.

4.3 Deploying Secure Parameters

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

Procedure

1. In the *Overview* tab, choose *Security Material* under the *Manage Security* section.
2. Generate the secure parameter in the tenants.

To allow the integration flows to be updated with minimal adaptation effort, use the alias for the secure parameter as follows: Secure Parameter alias (relevant only for Generic invoice):

`edoc_co_setid_<SoftwareID of company that created electronic document>`.

Example

`edoc_co_setid_e8da37cd-d0a1-43f4-b12e-ddu60ehd82fc`

Note

You create secure parameter alias for all unique software IDs used in the business system.

3. Deploy the secure parameter generated in the step above.
4. Access **► Create ► Secure Parameter ►** to add a secure parameter to the list.
5. Fill in the information as follows:
 - *Name*: Name of the secure parameter you created.
 - *Description*: Enter a description.
 - *Secure Parameter*: Test Set ID provided by DIAN for habilitation mode.
 - *Repeat Secure Parameter*: Repeat the test Set ID provided by DIAN for habilitation mode.

4.4 Copying Integration Flows

Copy all integration flows in the *SAP Document and Reporting Compliance: Electronic Invoicing for Colombia* package to the target tenant.

Procedure

1. Access [Discover](#) > [Integrations](#).
2. Search for the *SAP Document and Reporting Compliance: Electronic Invoicing for Colombia* package.
3. Open the package and choose *Copy*.

4.5 Configuring Integration Flows

You configure the package that you have copied in the previous step.

Context

There are 5 artifacts in the *SAP Document and Reporting Compliance: Electronic Invoicing for Colombia* integration package, as follows:

- Generic Invoice
- Get Status
- Get Ranges
- Attached Document
- Subsequent Document

Procedure

1. Access [Design](#) > [Integrations and APIs](#) and open the copied package.

Under the *Artifacts* tab, the following is available

- [Colombia Generic Invoice](#)
- [Colombia Get Status](#)
- [Colombia Get Ranges](#)
- [Colombia Attached Document](#)

- *Colombia Subsequent Document*
2. To configure *Colombia Generic Invoice*, choose **▶ Actions ▶ Configure**.
 3. Access the *Sender* tab and use the *Address* parameter to set up the integration package address. For example, `/ColombiaGenericInvoice`.
 4. Access the *More* tab and fill in the *signingTimeZone* field.
 5. To configure *Colombia Get Status*, choose **▶ Actions ▶ Configure**.
 6. Access the *Sender* tab and use the *Address* parameter to set up the integration package address. For example, `/ColombiaGetStatus`.
 7. Access the *More* tab and fill in the *Usage_Mode* field, the possible values are TEST or PROD.
 8. To configure *Colombia Get Ranges*, choose **▶ Actions ▶ Configure**.
 9. Access the *Sender* tab and use the *Address* parameter to set up the integration package address. For example, `/ColombiaQueryRanges`.
 10. To configure *Colombia Attached Document*, choose **▶ Actions ▶ Configure**.
 11. Access the *Sender* tab and use the *Address* parameter to set up the integration package address. For example, `/ColombiaAttachedDocument`.
 12. To configure *Colombia Subsequent Document*, choose **▶ Actions ▶ Configure**.
 13. Access the *Sender* tab and use the *Address* parameter to set up the integration package address. For example, `/ColombiaSubsqntDocument`.

4.6 Deploying Integration Flows

You deploy the integration flows.

Context

Procedure

1. Access the integration flow.
2. Choose *Actions* and *Deploy* to deploy it actively to server. Note down the URLs of the endpoints for each service.

ⓘ Note

Depending on the version of your tenant, after deploying the artifacts, warning messages can appear. You can ignore these messages - the first two warnings are related to the payload attachments, however, the invoice registration process does not currently support or require message attachments (for example, scanned copies of invoices) in any stage of processing and communication.

4.7 Copying Addresses for Configuration

You copy addresses of the integration flows to configure your SAP S/4HANA Cloud.

Procedure

1. Access ► *Monitor* ► *Integrations and APIs* ► and choose *All - All* under the *Manage Integration Content*.
Under *Manage Integration Content*, there are 3 apps labeled *All*. Choose the grey one.
2. Search for the integration flow.
3. Copy the URL for each integration flow. You will use these addresses when configuring your business system.

5 Configuration Steps for SAP S/4HANA Cloud

This section describes the required configuration for SAP S/4HANA Cloud.

5.1 Configuring Communication System

You create a communication system that represents your SAP Integration Suite tenant.

Prerequisites

1. Communication management setups are not transportable and must be explicitly maintained in quality and production systems.
2. You have the authorization delivered with the business role that contains the *Communication Management* (SAP_BCR_CORE_COM) business catalog.

Procedure

1. In your business system, access the *Communication Systems* app.
2. Choose *New* and, in the pop-up window, enter the *System ID* and *System Name* of your communication system.

The naming convention of the *System ID* is EDOC_<name of SAP Integration Suite tenant>.

Example

If the tenant host name is `example-tnn.avt.eu1.hana.ondemand.com`, then the system ID is `EDOC_EXAMPLE`.

3. Choose *Create*.
4. On the next page, paste the host name and port of your tenant.

EDOC_EXAMPLE
EDOC_EXAMPLE

Changed By: Example Con/ExpertBusNetInt Editing Status: Draft
Changed On: 11.10.2022, 14:17

General Users for Inbound Communication Users for Outbound Communication Business Partners Communication Arrangements

General Data

System ID: EDOC_EXAMPLE Notes:

System Name: EDOC_EXAMPLE

Technical Data

General

Host Name: UI Host Name:

Logical System: Business System:

Port: 443

Is Hub System:

Inbound Only:

5. Scroll down, and choose + next to *User for Outbound Communication*.
6. In the new pop-up window, select *User Name and Password*, enter the user name and password of your SAP Integration Suite tenant user that allows the communication with SAP S/4HANA Cloud
7. Choose *Save*.

5.2 Configuring Communication Arrangement

You configure the communication arrangement.

Procedure

1. Access the *Communication Arrangements* app.
2. Choose *New*.
3. In the pop-up window, fill in the information as follows:
 - **Scenario:** SAP_COM_0670 - this is the scenario you use for communication with the tax authority using the SAP Integration Suite package.
 - **Arrangement Name:** Enter a name similar to SAP_COM_0670_<name of SAP Integration Suite tenant>.

🔗 Example

For tenant host name beginning with `example-tmn.avt.eu1.hana.ondemand.com`, we suggest `SAP_COM_0670_EXAMPLE`.

4. Choose *Create*.
5. In the new window, choose the communication system (for example, EDOC_EXAMPLE) and the outbound communication created in the previous step.

6. For each outbound service, enter the *path* of the corresponding integration flow.

Outbound Services	
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaGenericInvoice</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaGenericInvoice</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaGenericInvoice</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaGetStatus</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaQueryRanges</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaAttachedDocument</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>
<p>Service Status: <input checked="" type="checkbox"/> Active</p> <p>Application Protocol: SOAP</p> <p>Port: 443</p>	<p>Path: /cxf/ColombiaSubsqntDocument</p> <p>Service URL: [Redacted]</p> <p>Use WSRM: <input type="checkbox"/></p>

7. Choose *Save*.

6 Testing the Integration

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

Context

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

Procedure



1. In the business system, access the *eDocument Cockpit* app.
2. Select an electronic document and check the status in the Cockpit. Perform the following actions accordingly:
 - If the status of the electronic document is `Created`, the document was created but not submitted yet. In this case, select it and choose *Submit*. This creates 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.
 - If the status is red, an error happened during the submission of the electronic document. Select the *Application Log* and the *Interface Log* to check for errors.

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