

Integration Guide | PUBLIC 2024-01-18

Egypt Electronic Invoicing: Setting Up SAP Integration Suite (SAP S/4HANA Cloud) - Cloud Foundry Environment



Content

1	Disclaimer	. 3
2	Introduction	4
3	Prerequisites	. 5
3.1	Setup of Secure Connection	. 5
3.2	Retrieve and Save Public Certificates	6
4	Configuration Steps in SAP Integration Suite	7
4.1	General Information	7
4.2	Deploy Credentials to Tenants	8
	Add Credentials for Authenticating Signature Device	. 8
	Add Credentials for Authenticating Tenant at Tax Authority	. 10
4.3	Copy Integration Flows	. 12
4.4	Configuring Integration Flows	.13
	Configuring Egyptian Tax Authority's Integration Flows	. 13
	Integration with Signing Server	. 16
	Configuring Egypt ERP Ping Integration Flow	. 16
	Configuring Egypt ERP Notification Integration Flow	. 20
4.5	Retrieve and Save Server Certificate Chain of Tax Authority	23
5	Configuration Steps for SAP S/4HANA Cloud.	25
5.1	Configuring Communication System	25
5.2	Configuring Communication Arrangement	. 28

1 Disclaimer

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2 Introduction

The communication part of processing electronic documents in Egypt is taken care of by SAP Integration Suite. In order to get SAP Integration Suite working, there are some required steps on both your SAP S/4HANA Cloud system and SAP Integration Suite tenant.

These steps are typically taken care of by an SAP Integration Suite consulting team, who is responsible for configuring the SAP S/4HANA Cloud and SAP Integration Suite connection and maintaining the integration content and certificates/credentials on the SAP Integration Suite 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 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 SAP S/4HANA Cloud 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.

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 Cloud Integration 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*.

3.1 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. For more information, see Connecting a Customer System to Cloud Integration.

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, see Operating and Monitoring Cloud Integration.

i Note

If you encounter any issues in the information provided in the SAP Integration Suite product page, open a customer incident against the ${\tt LOD-HCI-PI-OPS}$ 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 Retrieve and Save Public Certificates

Prerequisites

If you do not find any integration flows in your tenant then refer to Copy Integration Flows [page 12] and Configuring Integration Flows [page 13].

Context

Find and save the public certificates from your SAP Integration Suite 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. 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.
- 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 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 Invoice for Egypt* contains the following integration flows:

Egypt e-Invoicing Integration Flows

Integration Flow Name in WebUI	Project Name/Artifact Name
Egypt Submit Document	com.sap.GS.Egypt.SubmitDocument
Egypt Document Cancellation or Rejection	com.sap.GS.Egypt.CancelReject
Egypt Get Recent Documents	com.sap.GS.Egypt.GetRecentDocuments
Egypt Get Document Details	com.sap.GS.Egypt.GetDocDetails
Egypt Get Document PDF	com.sap.GS.Egypt.GetDocPDF
Egypt Decline Document Cancellation or Rejection	com.sap.GS.Egypt.Decline
Egypt Search Documents	com.sap.GS.Egypt.SearchDocuments
Egypt Trust Digital Signature Integration	com.sap.GS.Egypt.EgyptTrustDigitalSignatureIntegration

i Note

The Egypt Get Recent Documents integration flow is obsolete.

Document Notification Integration Flows

Integration Flow Name in WebUI	Project Name/Artifact Name
Egypt ERP Ping	com.sap.GS.Egypt.ERPPing
Egypt ERP Notification	com.sap.GS.Egypt.ERPNotifications

i Note

The integration flows *Egypt ERP Ping* and *Egypt ERP Notification* are supported only for S/4HANA versions 2021 onwards.

4.2 Deploy Credentials to Tenants

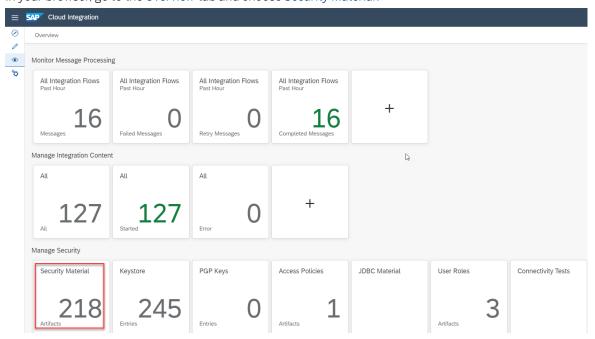
To establish a connection between the SAP Integration Suite and tax authority servers, you must obtain several security materials, and then add these to the SAP Integration Suite tenant.

4.2.1 Add Credentials for Authenticating Signature Device

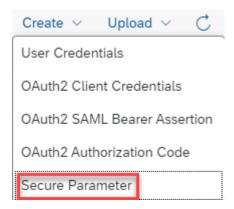
SAP Integration Suite uses a *Secure Parameter* to authenticate the communication with Signing device/server. For the Egypt elnvoice scenario, you must include credentials that are recognized by the eSeal provider like eTrust. A *Secure Parameter* is used to specific if a technical user is registered with a signing device/server.

If you use the Egypt Trust Signing Server then you can follow the steps in this section to deploy the Name and Secure Parameter to your SAP Integration Suite tenant.

1. In your browser, go to the Overview tab and choose Security Material.



2. Choose Create on the right corner and choose Secure Parameter.



3. Enter the name, description and secure parameter, and deploy them.

Create Secure Parameter



Deploy Cancel

You need to add Secure Parameter as follows:

• Name: The required format for the *Name* is "edoc_egypt_<type>_<taxpayerid>" (For example, edoc_egypt_secretkey_123456789).

i Note

Here the <type> can be:

- pin
- thumbprint
- secretkey
- signingServer

The Name is case sensitive.

- Description: 'Egypt Security Material Type'
- Secure Parameter: The value of the pin, thumb print, secret key and signing server should be entered for the Secure Parameter.

i Note

For the Signing Server security material the Secure Parameter is in the form of a URL. The required format of the URL is "cyrotocol//<IP Address>:Port" (For example, Http://1.2.3.4:9999).

• Repeat Secure Parameter: Re-enter the value of the Secure Parameter.

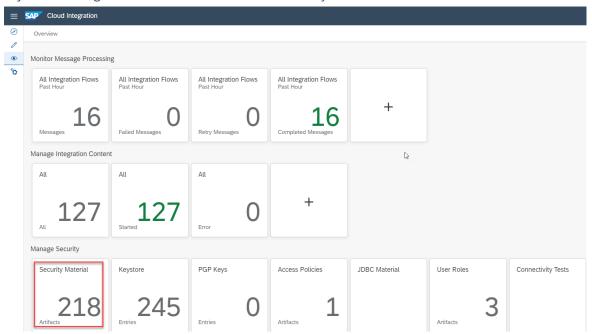
4.2.2 Add Credentials for Authenticating Tenant at Tax Authority

SAP Integration Suite uses a *OAuth2 Credential* to authenticate the communication with tax authority's system. For the Egypt elnvoice scenario, you must include credentials that are recognized by the tax authority (Egyptian Tax Authority, ETA). A *OAuth2 Credential* is specific to a technical user registered in the Online Invoicing System of the tax authority.

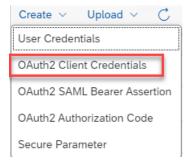
You need to add and deploy your *OAuth2 credentials* as Client Credentials in the Security Material section of your SAP Integration Suite tenant.

The user needs to add and deploy their credentials in the Test and Production systems based on the Tenants.

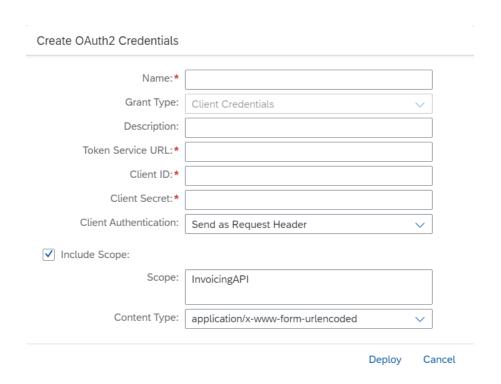
1. In your browser, go to the Overview tab and choose Security Material.



2. Choose Create on the right corner and choose Secure Parameter.



3. Enter the name, description and secure parameter, and deploy them.



You need to add the Client Credentials as follows:

• Name: The required format for the *Name* is "edoc_egypt_eta_<mode>_<taxpayerid>" (For example, edoc_egypt_eta_prod_123456789).

i Note

Here the <mode> can be:

- test
- prod

The Name is case sensitive.

- Token Service URL: To get the access token there are two types of service URLs based on the mode:
 - Test: https://id.preprod.eta.gov.eg/connect/token
 - Prod: https://id.eta.gov.eg/connect/token
- Client ID: Enter the Client ID received after registration with ETA.
- Client Secret: Enter the *Client Secret* received after registration with ETA.
- Scope: Enter the value "InvoicingAPI" for the Scope.

i Note

Select the Include Scope check box in order to enter the Scope and Content Type.

Content Type: Select the value "application/x-www-form-urlencoded" for the Content Type.

4.3 Copy Integration Flows

Context

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

Procedure

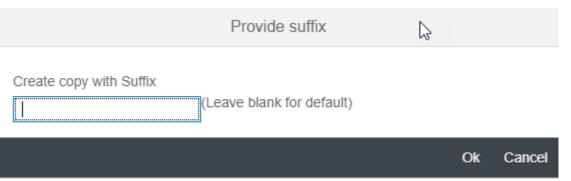
- 1. In your browser, go to the WebUI of the tenant (URL: <Tenant URL>/itspaces/#shell/catalog).
- 2. Choose Discover All ...



- ${\it 3. \ Search for SAP\ Document\ and\ Reporting\ Compliance: Electronic\ Invoice\ for\ Egypt.}$
- 4. Select the Package and choose Copy.



5. In the *Provide suffix* dialog box, leave the field blank, and choose *Ok*.



4.4 Configuring Integration Flows

Context

You configure the package that you've copied as described in Copy Integration Flows.

Procedure

- 1. Choose *Design* from the upper left corner of the page.
- 2. Click on the package that you copied from the original SAP Document and Reporting Compliance: Electronic Invoice for Egypt package.
- 3. Go to the Artifacts tab page.
- 4. There are nine Artifacts in the integration package SAP Document and Reporting Compliance: Electronic Invoice for Egypt:
 - Egypt Submit Document
 - Egypt Document Cancellation or Rejection
 - Egypt Get Recent Documents
 - Egypt Get Document Details
 - · Egypt Get Document PDF
 - Egypt Decline Document Cancellation or Rejection
 - Egypt Search Documents
 - Egypt Trust Digital Signature Integration
 - Egypt ERP Notification
 - Egypt ERP Ping

i Note

The Egypt Get Recent Documents integration flow is obsolete.

Please follow the steps in the below sections to configure your integration flows.

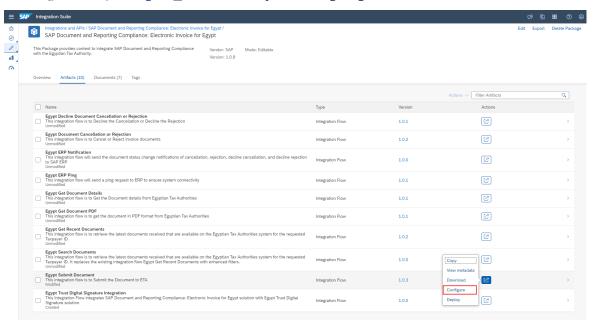
4.4.1 Configuring Egyptian Tax Authority's Integration Flows

Context

Take Egypt Submit Document as an example, similar steps should be done for the other integration flows.

Procedure

1. Choose Actions Configure for the artifact you're configuring.



2. Choose Configure More tab (in some versions it may be Externalized Parameters).

Configure "Egypt Submit Document"



i Note

Signing_Server_Process_Address parameter is only valid for *Egypt Submit Document* integration flow. For more information on what value you need to enter for this parameter, please refer to Integration with Signing Server [page 16].

i Note

When you configure the *Mode* as "TEST" or "PROD" the "TEST" or "PROD" APIs will be triggered along with the "TEST" or "PROD" credentials.

There are specific URLs you need to enter for different integration flows.

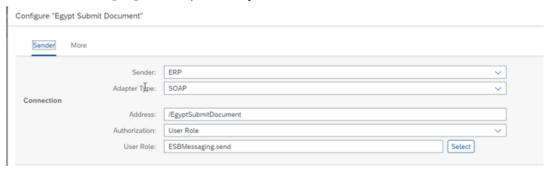
Parameter Name	URL
RECEIVER_PROD_URL	https://api.invoicing.eta.gov.eg
RECEIVER_TEST_URL	https://api.preprod.invoicing.eta.gov.eg

- 3. 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.

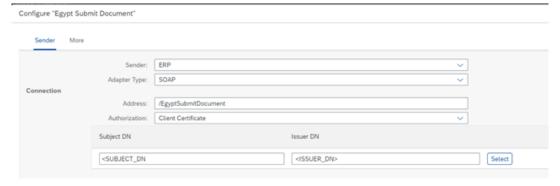
Value	Description
User Role	You want to use basic authentication (user/password).
Client Certificate	You want to use client certificate authentication.

• 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.



• Use the Subject DN and Issuer DN parameters to configure the Certificate based on which inbound authorization is checked. Choose *Select* and upload the required Certificate from your local machine.



4. 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 message can appear.

4.4.2 Integration with Signing Server

The standard package contains the *Egypt Trust Digital Signature Integration* integration flow by default to integrate the *Egypt Submit Document* integration flow with the Egypt Trust Digital Signature solution. You can create your own integration flow in the standard package based on the Signing Server you are using.

The Egypt Submit Document integration flow provides the externalized parameter Signing_Server_Process_Address to enter the address of customer developed integration flow, which is used to integrate with the preferred Digital Signature solution.

The *Egypt Submit Document* integration flow will send the JSON version of the electronic invoice to the customer developed integration flow via ProcessDirect receiver adaptor.

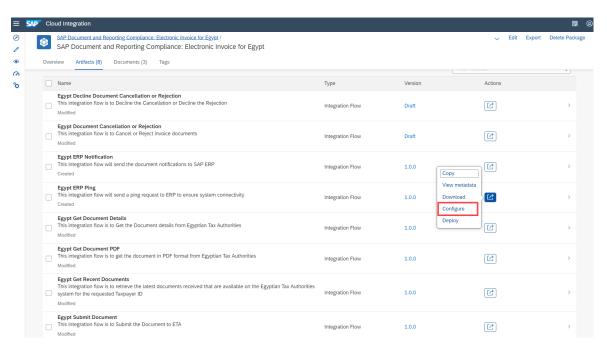
The customer developed integration flow is expected to receive the request from *Egypt Submit Document* via ProcessDirect sender adaptor and send back a response with the message body containing only the Digital Signature in Base64 format.

4.4.3 Configuring Egypt ERP Ping Integration Flow

Provides instructions for configuring integration flow for Egypt ERP Ping.

Procedure

1. Choose Actions Configure for the artifact you're configuring.



2. Choose Configure More tab (in some versions it may be Externalized Parameters).



i Note

When you configure the *Mode* as "TEST" or "PROD" the "TEST" or "PROD" APIs will be triggered along with the "TEST" or "PROD" credentials.

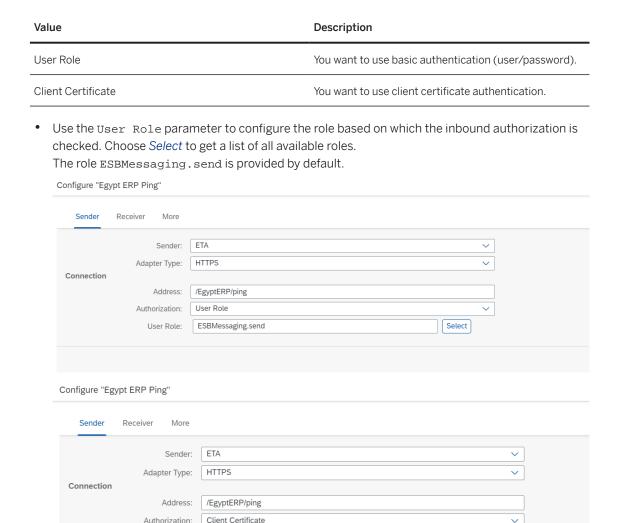
There are specific URLs you need to enter for different integration flows.

Parameter Name URL ERP_PROD_URL http://<host>/sap/bc/srt/scs_ext/sap/erp_ping ERP_TEST_URL http://<host>/sap/bc/srt/scs_ext/sap/erp_ping i Note If the target ERP system is not hosted publicly then you can expose the system via SAP Cloud

3. Choose Configure Sender tab.

Connector.

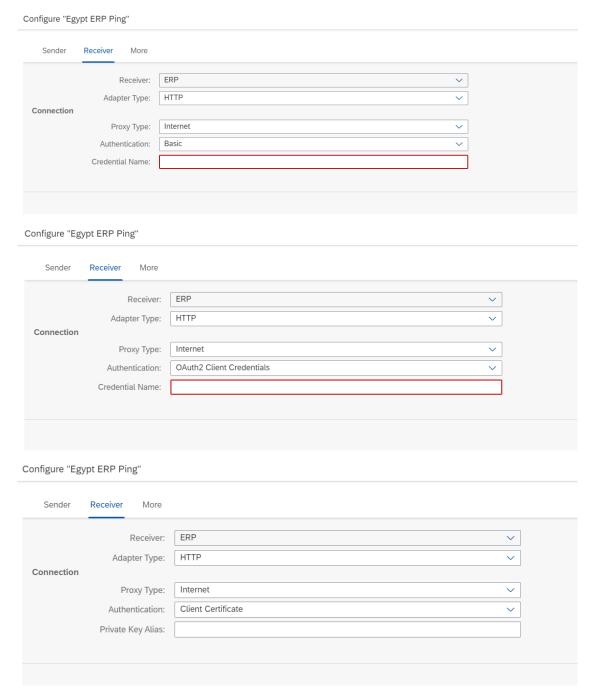
- Use the Address parameter to set up the integration package address. Normally you don't have to change this field. In case you change the field, make sure to use the same address when configuring the logical ports in the next chapter.
- Use the Authorization parameter to configure the authorization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



4. Choose Configure Receiver tab.

Authorization:

- You can select the *Proxy Type* as **Internet** or **On-Premise** if you are using SAP Cloud Connector.
- You can select the Authentication as Basic, OAuth2 Client Credentials, or Client Certificate.
- For the Credential Name (or Private Key Alias if you are using Client Certificate as the Authentication method) you need to enter the value of the Secure Parameter from the security material.



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

i Note

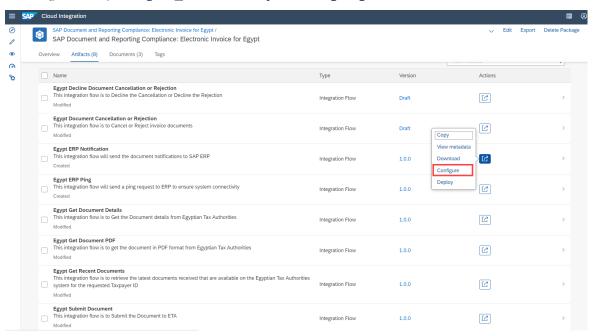
Depending on the version of your tenant, after pressing these buttons, a warning message can appear.

4.4.4 Configuring Egypt ERP Notification Integration Flow

Provides instructions for configuring integration flow for Egypt ERP Notification.

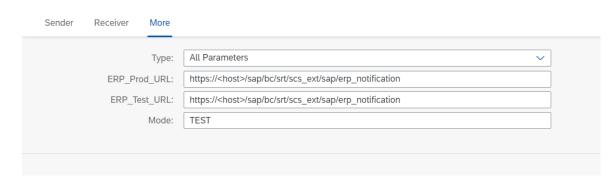
Procedure

1. Choose Actions Configure for the artifact you're configuring.



2. Choose Configure More tab (in some versions it may be Externalized Parameters).

Configure "Egypt ERP Notification"



i Note

When you configure the *Mode* as "TEST" or "PROD" the "TEST" or "PROD" APIs will be triggered along with the "TEST" or "PROD" credentials.

There are specific URLs you need to enter for different integration flows.

Parameter Name	URL
ERP_PROD_URL	https:// <host>/sap/bc/srt/scs_ext/sap/erp_notification</host>
ERP_TEST_URL	https:// <host>/sap/bc/srt/scs_ext/sap/erp_notification</host>

i Note

If the target ERP system is not hosted publicly then you can expose the system via SAP Cloud Connector.

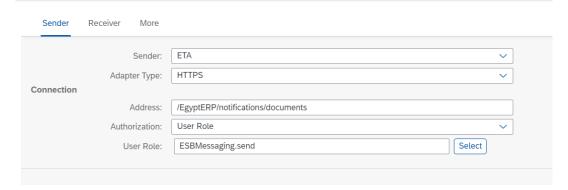
- 3. Choose Configure Sender tab.
 - Use the Address parameter to set up the integration package address. Normally you don't have to change this field. In case you change the field, make sure to use the same address when configuring the logical ports in the next chapter.
 - Use the Authorization parameter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

Value	Description
User Role	You want to use basic authentication (user/password).
Client Certificate	You want to use client certificate authentication.

• 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 "Egypt ERP Notification"

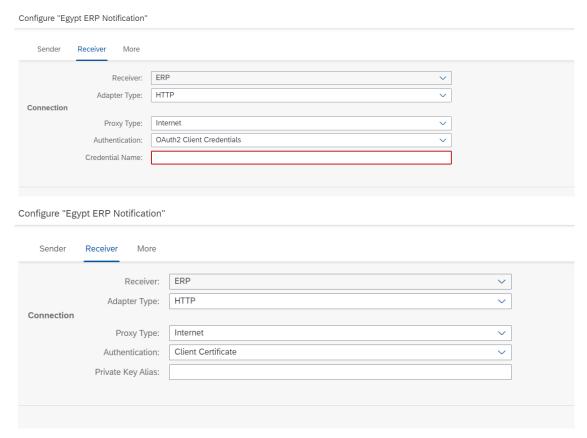


Configure "Egypt ERP Notification"



- 4. Choose Configure Receiver tab.
 - You select the *Proxy Type* as **Internet** or **On-Premise** if you are using SAP Cloud Connector.
 - You can select the Authentication as Basic, OAuth2 Client Credentials, or Client Certificate
 - For the Credential Name (or Private Key Alias if you are using Client Certificate as the Authentication method) you need to enter the value of the Secure Parameter from the security material.





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 message can appear.

4.5 Retrieve and Save Server Certificate Chain of Tax Authority

You can find and save the Server Certificate Chain from your Tax Authority

Procedure

- 1. In your browser, navigate to the WebUI of the tenant (URL: <Tenant URL>/itspaces/shell/monitoring/).
- 2. Under Manage Security, choose Connectivity Tests.
- 3. Choose TLS. Enter the following details:

- Host: There are two *Host* names based on the type of tenant:
 - PROD:api.invoicing.eta.gov.eg
 - TEST: api.preprod.invoicing.eta.gov.eg

Port: 443

- Clear the options Authenticate with Client Certificate and Valid Server Certificate Required.
- 4. Choose Send.
- 5. Download and extract the Server Certificate Chain.
- 6. Navigate to Manage Security from step 2. Choose Keystore.
- 7. Add all the extracted Certificates, one after another. Choose Add Certificate Browse and choose a certificate to upload. Choose Add.



i Note

You should add the TEST or PROD certificates based on the *Host* name entered in Step 3.

8. Repeat steps 3 and 4 after adding all the certificates.



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 Communication System

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

Prerequisites

- 1. Live SAP Integration Suite test or productive tenant must be available.
- 2. Communication management setups are not transportable and must be explicitly maintained in quality and production systems.
- 3. The SAP S/4HANA Cloud user, who is following this guide, must be assigned to a business role that contains the business catalog SAP_BCR_CORE_COM (Communication Management) for accessing communication management apps.

Procedure

- 1. Login to your S/4HANA Cloud tenant with the Cloud User.
- 2. Find and launch the app Communication Systems.



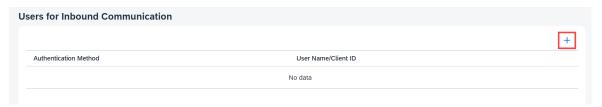
3. Choose New, and in the pop-up window, enter the System ID and System Name of your communication system. Naming convention of System ID is EDOC_<name of SAP Integration Suite tenant>. For example, if the tenant host name is example-tmn.avt.eul.hana.ondemand.com, then System ID is EDOC_EXAMPLE.

New Communication System



- 4. Choose Create.
- 5. On the next page, enter the host name and port of your tenant. You can find the host name for your SAP Integration Suite tenant, as follows:
 - 1. From the menu on the left, choose *Monitor*.
 - 2. Select Manage Integration Content (All).
 - 3. Search for the integration flow for the scenario you are configuring.
 - 4. Find the host name from the *Endpoints* tab.
 - 5. The composition of an endpoint URL is https://<host name>/<path>.

6. Scroll down, and choose + next to User for Inbound Communication.

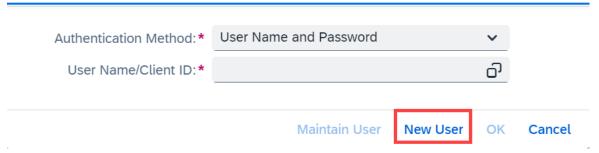


i Note

This step is **optional** if you do not want to use Inbound Communication for notifications.

7. In the new pop-up window, choose New User.

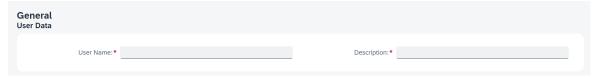
New Inbound Communication User



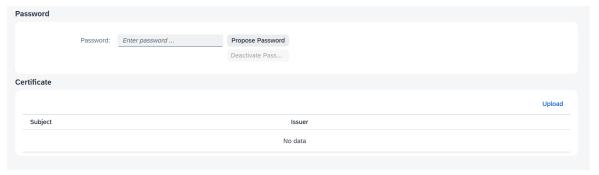
i Note

You can also select an Inbound Communication User if you have already created a user using the Create Communication User app. For this, you need to select the Authentication Method as either User Name and Password or SSL Client Certificate. You can select your communication user in the User Name/Client ID field.

8. In the Create Communication User app, enter the User Name and Description under User Data.



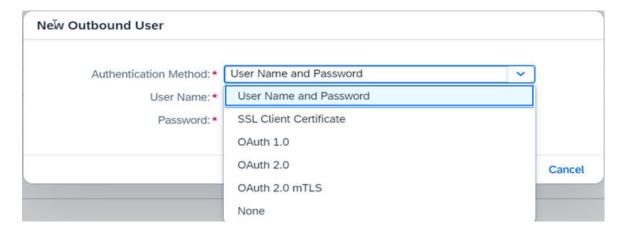
9. You can enter a Password or select a Certificate and then click Create to create a communication user.



10. Scroll down, and choose + next to *User for Outbound Communication*.



11. In the new pop-up window, select the appropriate authentication method to connect to your SAP Integration Suite tenant, as described in the Implementation Guide.



- For the authentication method *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.
- For the authentication method SSL Client Certificate, select the Default Client Certificate type and choose Create.

i Note

If you want to create your own Client Certificate, please refer https://help.sap.com/docs/SAP_S4HANA_CLOUD/55a7cb346519450cb9e6d21clecd6ec1/cb18de0f63b648d1a44bfe9bec1a4415.html?locale=en-US.

12. Choose Save.

5.2 Configuring Communication Arrangement

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

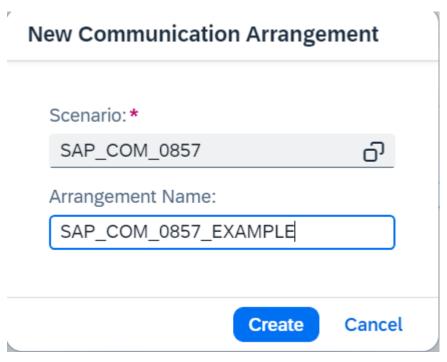
Procedure

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

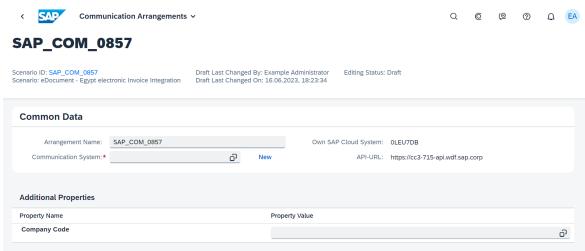


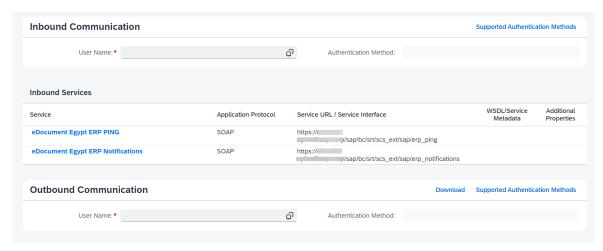
3. Choose New. In the new pop-up window, enter the Scenario as SAP_COM_0857 (which is the one designated for communication with the tax authority via SAP Integration Suite package) and an Arrangement Name. For Arrangement Name it is recommended to choose a name like SAP_COM_0857_<name of SAP Integration Suite tenant>.

For example, SAP_COM_0857_EXAMPLE for tenant host name beginning with example-tmn.avt.eul.hana.ondemand.com.

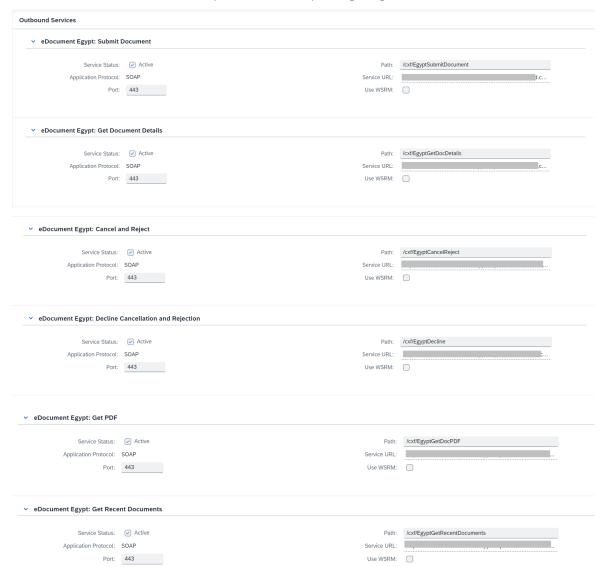


- 4. Choose Create.
- 5. In the new window, choose the communication system (for example, EDOC_EXAMPLE), Additional Properties, Inbound Communication and Outbound Communication created in the previous step.





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





7. Choose Save.

31

Important Disclaimers and Legal Information

Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information About the icons:

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