

Oracle® Cloud

Using the SAP SuccessFactors Adapter with Oracle Integration 3



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Contents

Preface

Audience	v
Documentation Accessibility	v
Diversity and Inclusion	v
Related Resources	vi
Conventions	vi

1 Understand the SAP SuccessFactors Adapter

SAP SuccessFactors Adapter Capabilities	1-1
Supported SuccessFactors Events	1-3
What Application Version Is Supported?	1-4
About SAP SuccessFactors Adapter Use Cases	1-4
Workflow to Create and Add a SAP SuccessFactors Adapter Connection to an Integration	1-5

2 Create a SAP SuccessFactors Adapter Connection

Prerequisites for Creating a Connection	2-1
Create a Connection	2-2
Configure Connection Properties	2-4
Configure Connection Security	2-4
Configure the Endpoint Access Type	2-5
Test the Connection	2-6
Upload a Certificate to Connect with External Services	2-6
Refresh Integration Metadata	2-9

3 Add the SAP SuccessFactors Adapter Connection to an Integration

Basic Info Page	3-1
Trigger Events Page	3-1
Invoke Operations Page	3-2
Invoke System Query Options Page	3-4

4 Implement Common Patterns Using the SAP SuccessFactors Adapter

Fetch More than 800 Records from SAP SuccessFactors Using the queryMore Operation in SFQL	4-1
Receive an Event from SAP SuccessFactors and Write the Event to the Target File Location	4-2
Extract Employee Data from SAP SuccessFactors Employee Central	4-3
Synchronize Candidate Data from SAP SuccessFactors Employee Central	4-4

Preface

This guide describes how to configure this adapter as a connection in an integration in Oracle Integration.



Note:

The use of this adapter may differ depending on the features you have, or whether your instance was provisioned using Standard or Enterprise edition. These differences are noted throughout this guide.

Topics:

- [Audience](#)
- [Documentation Accessibility](#)
- [Diversity and Inclusion](#)
- [Related Resources](#)
- [Conventions](#)

Audience

This guide is intended for developers who want to use this adapter in integrations in Oracle Integration.

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Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation.

We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

See these Oracle resources:

- Oracle Cloud at <http://cloud.oracle.com>
- *Using Integrations in Oracle Integration 3*
- *Using the Oracle Mapper with Oracle Integration 3*
- Oracle Integration documentation on the Oracle Help Center.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the SAP SuccessFactors Adapter

Review the following conceptual topics to learn about the SAP SuccessFactors Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

- [SAP SuccessFactors Adapter Capabilities](#)
- [What Application Version Is Supported?](#)
- [About SAP SuccessFactors Adapter Use Cases](#)
- [Workflow to Create and Add a SAP SuccessFactors Adapter Connection to an Integration](#)



Note:

There are overall service limits with Oracle Integration. A service limit is the quota or allowance set on a resource. See [Service Limits](#).

SAP SuccessFactors Adapter Capabilities

The SAP SuccessFactors Adapter enables you to create an integration between SAP SuccessFactors and Oracle Integration. You can configure the SAP SuccessFactors Adapter as a trigger connection or an invoke connection in an integration in Oracle Integration. This section identifies the capabilities of the SAP SuccessFactors Adapter when used as a trigger or invoke connection.

- [SAP SuccessFactors Adapter Capabilities When Configured as a Trigger](#)
- [SAP SuccessFactors Adapter Capabilities When Configured as an Invoke](#)

SAP SuccessFactors Adapter Capabilities When Configured as a Trigger

- Supports consuming SOAP endpoints.
- Supports SuccessFactors Intelligent Services (ISC) events. ISCs are designed to connect and automate processes between SAP SuccessFactors and other third-party applications. These events are dependent on a workflow approval. The respective event is triggered once approved by the approver. Without approval, the event cannot be triggered. Once an event is triggered, it is delivered to the target system based on the rule and endpoint URL configuration.

 **Note:**

The workflow approval applies only to specified tasks, and not for all events. You can also add a condition for triggering an event. The event is triggered only when the condition is fulfilled.

- Supports SuccessFactors Custom Policy and SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support authentication.

SAP SuccessFactors Adapter Capabilities When Configured as an Invoke

To execute OData APIs:

The SAP SuccessFactors Adapter supports the following capabilities when configured as an invoke connection to execute OData APIs:

- Supports connecting to private resources that are in your virtual cloud network (VCN) with a private endpoint. See *Connect to Private Resources in Provisioning and Administering Oracle Integration 3* and [Configure the Endpoint Access Type](#). This type of connection does not use the connectivity agent.
- Supports consuming OData endpoints.
- Supports executing GET and Search operations with the following query options that are compatible with the OData APIs. You can execute one query or a combination of queries at a time.
 - \$expand (select navigation properties)
 - \$select (select required fields in response)
 - \$filter
 - \$orderby
 - \$inlinecount
 - \$top
 - \$skip
 - CustomPageSize
- Supports pagination.
- Supports multilevel navigation for the Get and Search operations.
- Supports SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support authentication.

To execute SOAP APIs:

The SAP SuccessFactors Adapter supports the following capabilities when configured as an invoke connection to execute SOAP APIs:

- Supports connecting to private resources that are in your virtual cloud network (VCN) with a private endpoint. See *Connect to Private Resources in Provisioning and Administering Oracle Integration 3* and [Configure the Endpoint Access Type](#). This type of connection does not use the connectivity agent.
- Supports consuming SOAP endpoints.
- Supports the Compound Employee application programming interface (API). See [Extract Employee Data from SAP SuccessFactors Employee Central](#).

- Supports SuccessFactors Custom Policy and SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support authentication.

The SAP SuccessFactors Adapter is one of many predefined adapters included with Oracle Integration. See the Adapters page in the Oracle Help Center.

Supported SuccessFactors Events

The following events are supported when configuring the SAP SuccessFactors Adapter as a trigger in the Adapter Endpoint Configuration Wizard.

- Recruiting
 - Approval of offer details
 - Update of candidate profile
 - Update of job requisition
 - Update of job application
 - Update of job application status
- Continuous Performance
 - Continuous feedback received
 - Continuous feedback request
 - Continuous Performance Management achievement
 - Continuous Performance Management activity
 - Completion of learning
- Employee Central
 - Add global assignment
 - Change in business unit
 - Manager to individual contributor
 - Change in employee department
 - Change in employee division
 - Employee Rehire
 - First time manager
 - Start probation
 - Expiration of work order
 - End global assignment
 - Change in employee location
 - Employee termination
 - New concurrent employment
 - Change in job title
 - Completion of New Hire activity
 - Job transfer
 - Individual contributor to manager

- Change in Job classification
- Change in manager
- Employee hire
- Time Off
 - Employee short term disability
 - Employee time off
 - Employee long term disability
- Onboarding and Offboarding
 - Offboarding step complete
 - Onboarding step complete
 - External user to internal user conversion
- Talent Management
 - Populate Performance Review ratings
 - Performance review form routing
 - Spot Award given
 - Calibration session activation
- Others
 - DocuSign envelope status update
 - Update of employee competency assessment
 - Workforce plan update

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the [Connectivity Certification Matrix](#).

About SAP SuccessFactors Adapter Use Cases

The SAP SuccessFactors Adapter can be used in a variety of scenarios.

- A Salesforce Adapter trigger connection is integrated with an SAP SuccessFactors Adapter invoke connection, which creates an incident whenever any new case gets created in Salesforce.
- Employee onboarding from SAP and Salesforce applications.
- SAP (employees data) – SuccessFactors (user data) synchronization.
- Employees synchronization with customer ERP/HCM systems with users.

Workflow to Create and Add a SAP SuccessFactors Adapter Connection to an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration in Oracle Integration.

Step	Description	More Information
1	Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.	Create a SAP SuccessFactors Adapter Connection
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Understand Integration Creation and Best Practices in <i>Using Integrations in Oracle Integration 3</i> and Add the SAP SuccessFactors Adapter Connection to an Integration
3	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in <i>Using Integrations in Oracle Integration 3</i>
4	(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).	Manage Lookups in <i>Using Integrations in Oracle Integration 3</i>
5	Activate the integration.	Manage Integrations in <i>Using Integrations in Oracle Integration 3</i>
6	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in <i>Using Integrations in Oracle Integration 3</i>
7	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in <i>Using Integrations in Oracle Integration 3</i>
8	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in <i>Using Integrations in Oracle Integration 3</i>

2

Create a SAP SuccessFactors Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Topics:

- [Prerequisites for Creating a Connection](#)
- [Create a Connection](#)
- [Upload a Certificate to Connect with External Services](#)
- [Refresh Integration Metadata](#)

Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the SAP SuccessFactors Adapter:

- [Subscribe to SAP SuccessFactors](#)
- [Configure Support for Selecting Events](#)
- [Create a Client Application](#)

Subscribe to SAP SuccessFactors

Purchase a subscription to SAP SuccessFactors. When you subscribe, you receive a company ID, username, and password. The information required for creating a SAP SuccessFactors Adapter connection on the Connections page includes an SFAPI WSDL location (WSDL URL). This WSDL location represents your API endpoint, which depends on where your SAP SuccessFactors instance is located. It can be in one of several data centers. Contact your SAP SuccessFactors representative if you are unsure of which data center to use.

See [Configure Connection Properties](#) and [Configure Connection Security](#).

Configure Support for Selecting Events

1. Log in to SAP SuccessFactors.
2. In the upper-right corner, search for `Intelligent services` in the search box, then click **Intelligent Services Center (ISC)**.

You are redirected to the Intelligent Services Center. The Intelligent Services Center lists all events available in your SAP SuccessFactors instance.

3. Select the required event to configure (for example, **Add Global Assignment**).
4. Create a flow or modify the existing flow for triggering the event.
5. Add an event connector to subscribe to the event.

6. For configuring the event connector, you can either modify the existing event connector with your endpoint URL and authentication or you can configure a new event connector.
7. Click the event connector under custom activities, and then click the new event connector to configure a new event connector.
8. Configure the endpoint URL of the event connector with the integration endpoint URL that is obtained after activating the integration in Oracle Integration, along with basic authentication details that are supported by Oracle Integration.
9. Configure the flow rule for triggering the event.
10. Navigate to the actions section and save the flow.

 **Note:**

Ensure that the configuration is saved. The event is not triggered if the configuration is not saved.

Create a Client Application

If you want to use the SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support security policy, you must satisfy the following prerequisites.

When you register your client application, SAP SuccessFactors automatically generates the API key and shared secret (private key). You'll use it when you configure security for your SAP SuccessFactors Adapter connection.

To create a client application in SAP SuccessFactors:

1. Sign in to the SAP SuccessFactors admin center.
2. Search for `Manage OAuth2 Client Applications` in the **Tools Search** field.
3. Click **Register Client Application**.
4. Enter the relevant information.
5. Click **Register**. The system generates the API key and shared secret (private key).
6. Copy the API key and shared secret values. You'll need to enter these values in the **API Key** and **Private Key** fields when you configure security for your SAP SuccessFactors Adapter connection in Oracle Integration. See [Configure Connection Security](#).

Create a Connection

Before you can build an integration, you must create the connections to the applications with which you want to share data.

To create a connection in Oracle Integration:

1. In the navigation pane, click **Design**, then **Connections**.
2. Click **Create**.

 **Note:**

You can also create a connection in the integration canvas. See Define Inbound Triggers and Outbound Invokes.

3. In the Create connection panel, select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field.
4. Enter the information that describes this connection.

Element	Description
Name	Enter a meaningful name to help others find your connection when they begin to create their own integrations.
Identifier	Automatically displays the name in capital letters that you entered in the Name field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
Role	<p>Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by the adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, you'll get an error when you try to drag the adapter into the section you didn't select.</p> <p>For example, assume you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an invoke. Dragging the adapter to a trigger section in the integration produces an error.</p>
Keywords	Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
Description	Enter an optional description of the connection.
Share with other projects	<p>Note: This field only appears if you are creating a connection in a project.</p> <p>Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.</p> <p>When you configure an adapter connection in a different project, the Use a shared connection field is displayed at the top of the Connections page. If the connection you are configuring matches the same type and role as the publicly available connection, you can select that connection to reference (inherit) its resources. See Add and Share a Connection Across a Project.</p>

5. Click **Create**.

Your connection is created. You're now ready to configure the connection properties, security policies, and (for some connections) access type.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. In the **SFAPI WSDL Location or Hostname** field, enter only one of the following based on your requirement:

- To execute the SOAP API:
Enter the WSDL. For example:

```
https://host_name.successfactors.com/sfapi/v1/soap?wsdl
```

The WSDL endpoint depends on where your SAP SuccessFactors instance is located. It can be in one of several data centers. Contact your SAP SuccessFactors representative if you are unsure of which data center to use. Access the WSDL by appending `?wsdl` to the endpoint.

- To execute the OData API:
Enter the SAP SuccessFactors host name. For example:

```
https://host_name.successfactors.com
```

The SAP SuccessFactors host name can easily be derived from the SAP SuccessFactors login URL.

Configure Connection Security

Configure security for your SAP SuccessFactors Adapter connection by selecting the security policy and security token.

1. Go to the **Security** section.
2. From the **Security Policy** list, select the security policy.
 - **SuccessFactors Custom Policy**: Select this security policy to execute the SOAP API.
 - **SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support**: Select this security policy if you need to execute both the OData and SOAP APIs.
3. If you select **SuccessFactors Custom Policy**:
 - a. In the **Company ID** field, enter the SAP SuccessFactors client instance. You received the company ID, username, and password when you subscribed to SAP SuccessFactors.
 - b. In the **Username** and **Password** fields, enter the username and password to connect to the SAP SuccessFactors instance.
4. If you select **SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support**:

- a. In the **Company ID** field, enter the SAP SuccessFactors client instance. You received the company ID, username, and password when you subscribed to SAP SuccessFactors.
- b. In the **API Key** field, enter the API key that you obtained when creating a client application. See [Create a Client Application](#).
- c. In the **Private Key** field, enter the private key that you obtained when creating a client application. See [Create a Client Application](#).
- d. In the **Username** field, enter the username to connect to the SAP SuccessFactors instance.
- e. (Optional) In the **Password** field, enter the password to connect to the SAP SuccessFactors instance. You can execute both the OData and SOAP APIs without providing the password because this is an optional field.

 **Note:**

Starting with the August 2022 release, you do not need to provide a password to use the SuccessFactors SAML Bearer Assertion Flow with Username Password Token Support security policy to execute the SOAP API. For a connection created prior to the August 2022 release, you can manually refresh the metadata. See [Refresh Integration Metadata](#).

Configure the Endpoint Access Type

Configure access to your endpoint. Depending on the capabilities of the adapter you are configuring, options may appear to configure access to the public internet, to a private endpoint, or to an on-premises service hosted behind a fire wall.

- [Select the Endpoint Access Type](#)
- [Ensure Private Endpoint Configuration is Successful](#)

Select the Endpoint Access Type

Select the option for accessing your endpoint.

Option	This Option Appears If Your Adapter Supports ...
Public gateway	Connections to endpoints using the public internet.
Private endpoint	Connections to endpoints using a private virtual cloud network (VCN). Note: To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Infrastructure Console. Failure to do so results in errors when testing the connection. See <i>Connect to Private Resources in Provisioning and Administering Oracle Integration 3</i> and <i>Troubleshoot Private Endpoints in Using Integrations in Oracle Integration 3</i> .

Ensure Private Endpoint Configuration is Successful

- To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Infrastructure Console. Failure to do so results in errors when testing the connection. See *Connect to Private Resources in Provisioning and Administering Oracle Integration 3*.
- When configuring an adapter on the Connections page to connect to endpoints using a private network, specify the fully-qualified domain name (FQDN) and *not* the IP address. If you enter an IP address, validation fails when you click **Test**.
- IPsec tunneling and FastConnect are not supported for use with private endpoints.

Test the Connection

Test your connection to ensure that it's configured successfully.

1. In the page title bar, click **Test**. What happens next depends on whether your adapter connection uses a Web Services Description Language (WSDL) file. Only some adapter connections use WSDLs.

If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.
Uses a WSDL	A dialog prompts you to select the type of connection testing to perform: <ul style="list-style-type: none"> • Validate and Test: Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL. • Test: Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

2. Wait for a message about the results of the connection test.
 - If the test was successful, then the connection is configured properly.
 - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is successful.
3. When complete, click **Save**.

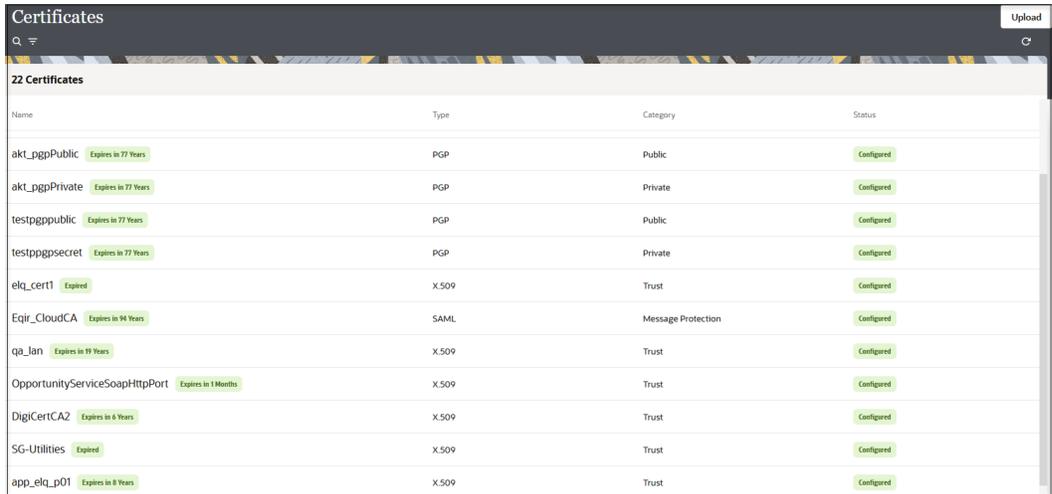
Upload a Certificate to Connect with External Services

Certificates allow Oracle Integration to connect with external services. If the external service/endpoint needs a specific certificate, request the certificate and then import it into Oracle Integration.

If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception error is thrown. In that case, you must upload the appropriate certificate. A certificate enables Oracle Integration to connect with external services. If

the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration.

1. Sign in to Oracle Integration.
2. In the navigation pane, click **Settings**, then **Certificates**. All certificates currently uploaded to the trust store are displayed on the Certificates page.
3. Click **Filter**  to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.



Name	Type	Category	Status
akt_ppgPublic <small>Expires in 77 Years</small>	PGP	Public	Configured
akt_ppgPrivate <small>Expires in 77 Years</small>	PGP	Private	Configured
testppgpublic <small>Expires in 77 Years</small>	PGP	Public	Configured
testppgsecret <small>Expires in 77 Years</small>	PGP	Private	Configured
elq_cert1 <small>Expired</small>	X.509	Trust	Configured
Eqir_CloudCA <small>Expires in 94 Years</small>	SAML	Message Protection	Configured
qa_lan <small>Expires in 19 Years</small>	X.509	Trust	Configured
OpportunityServiceSoapHttpPort <small>Expires in 1 Months</small>	X.509	Trust	Configured
DigiCertCA2 <small>Expires in 6 Years</small>	X.509	Trust	Configured
SG-Utilities <small>Expired</small>	X.509	Trust	Configured
app_elq_p01 <small>Expires in 8 Years</small>	X.509	Trust	Configured

4. Click **Upload** at the top of the page. The Upload certificate panel is displayed.
5. Enter an alias name and optional description.
6. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
 - [Digital Signature](#)
 - [X.509 \(SSL transport\)](#)
 - [SAML \(Authentication & Authorization\)](#)
 - [PGP \(Encryption & Decryption\)](#)
 - [Signing key](#)

Digital Signature

The digital signature security type is typically used with adapters created with the Rapid Adapter Builder. See [Learn About the Rapid Adapter Builder in Oracle Integration in *Using the Rapid Adapter Builder with Oracle Integration 3*](#).

1. Click **Browse** to select the digital certificate. The certificate must be an X509Certificate. This certificate provides inbound RSA signature validation. See [Implement Digital Signature Validation \(RSA\) in *Using the Rapid Adapter Builder with Oracle Integration 3*](#).
2. Click **Upload**.

X.509 (SSL transport)

1. Select a certificate category.
 - a. **Trust:** Use this option to upload a trust certificate.
 - i. Click **Browse**, then select the trust file (for example, `.cer` or `.crt`) to upload.
 - b. **Identity:** Use this option to upload a certificate for two-way SSL communication.
 - i. Click **Browse**, then select the keystore file (`.jks`) to upload.
 - ii. Enter the comma-separated list of passwords corresponding to key aliases.

 **Note:**

When an identity certificate file (`.jks`) contains more than one private key, all the private keys must have the same password. If the private keys are protected with different passwords, the private keys cannot be extracted from the keystore.

- iii. Enter the password of the keystore being imported.
 - c. Click **Upload**.

SAML (Authentication & Authorization)

1. Note that **Message Protection** is automatically selected as the only available certificate category and cannot be deselected. Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported with this type of certificate.
2. Click **Browse**, then select the certificate file (`.cer` or `.crt`) to upload.
3. Click **Upload**.

PGP (Encryption & Decryption)

1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.
 - a. **Private:** Uses a private key of the target location to decrypt the file.
 - i. Click **Browse**, then select the PGP file to upload.
 - ii. Enter the PGP private key password.
 - b. **Public:** Uses a public key of the target location to encrypt the file.
 - i. Click **Browse**, then select the PGP file to upload.
 - ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**.
 - **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be

sent in a standard messaging format. This selection impacts the visibility of message content.

- **No** causes the message to be sent in binary format.
- iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. The following supported cipher algorithms are FIPS-compliant:
- AES128
 - AES192
 - AES256
 - TDES
- c. Click **Upload**.

Signing key

A signing key is a secret key used to establish trust between applications. Signing keys are used to sign ID tokens, access tokens, SAML assertions, and more. Using a private signing key, the token is digitally signed and the server verifies the authenticity of the token by using a public signing key. You must upload a signing key to use the OAuth Client Credentials using JWT Client Assertion and OAuth using JWT User Assertion security policies in REST Adapter invoke connections. Only PKCS1- and PKCS8-formatted files are supported.

1. Select **Public** or **Private**.
2. Click **Browse** to upload a key file.
If you selected **Private**, and the private key is encrypted, a field for entering the private signing key password is displayed after key upload is complete.
3. Enter the private signing key password. If the private signing key is not encrypted, you are not required to enter a password.
4. Click **Upload**.

Refresh Integration Metadata

You can manually refresh the currently-cached metadata available to adapters that have implemented metadata caching.

Metadata changes typically relate to customizations of integrations, such as adding custom objects and attributes to integrations. There may also be cases in which integrations have been patched, which results in additional custom objects and attributes being added. This option is similar to clearing the cache in your browser. Without a manual refresh, a staleness check is only performed when you drag a connection into an integration. This is typically sufficient, but in some cases you may know that a refresh is required. For these cases, the **Refresh Metadata** menu option is provided.



Note:

The **Refresh Metadata** menu option is only available with adapters that have implemented metadata caching.

1. In the navigation pane, click **Design**, then **Connections**.
2. Hover over the connection to refresh.
3. Click **Actions** , then select **Refresh metadata**.

A message is displayed indicating that the refresh was successful.

3

Add the SAP SuccessFactors Adapter Connection to an Integration

When you drag the SAP SuccessFactors Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through configuration of the SAP SuccessFactors Adapter endpoint properties.

These topics describe the wizard pages that guide you through configuration of the SAP SuccessFactors Adapter as a trigger or an invoke in an integration. The SAP SuccessFactors Adapter cannot be used as a trigger in an integration to execute the OData API.

Topics:

- [Basic Info Page](#)
- [Trigger Events Page](#)
- [Invoke Operations Page](#)
- [Invoke System Query Options Page](#)
- [Summary Page](#)

Basic Info Page

You can enter a name and description on the Basic Info page of each adapter in your integration.

Element	Description
What do you want to call your endpoint?	Provide a meaningful name so that others can understand the responsibilities of this connection. You can include English alphabetic characters, numbers, underscores, and hyphens in the name. You can't include the following characters: <ul style="list-style-type: none">• No blank spaces (for example, My Inbound Connection)• No special characters (for example, #;83& or righ(t)now4) except underscores and hyphens• No multibyte characters
What does this endpoint do?	Enter an optional description of the connection's responsibilities. For example: <code>This connection receives an inbound request to synchronize account information with the cloud application.</code>

Trigger Events Page

You can select the event notifications to receive from SAP SuccessFactors.

**Note:**

The SAP SuccessFactors Adapter cannot be used as a trigger in an integration to execute the OData APIs.

Element	Description
Select the Event Name	Select the event notification to which to subscribe.

Invoke Operations Page

Select the operation type and business object on which to perform the operation.

Select the endpoint type:

- **OData:** (Open Data Protocol) select this option to search/retrieve a record for the selected object from the SAP SuccessFactors application and create/merge/replace/upsert a record in the SAP SuccessFactors application using the OData API.
- **SOAP:** (Simple Object Access Protocol) select this option to search/retrieve a record from the SAP SuccessFactors application and insert/upsert/update/delete a record in/from the SAP SuccessFactors application using the SOAP API.

OData

Element	Description
Select Entity	Select an entity such as Currency, Job Application, User , and so on.
Filter by entity name	Type the initial letters of the entity to filter the display of names in the list.
Select an Operation Type	Select an operation name, such as Search, Get, Create, Merge, Replace, or Upsert .

SOAP

Element	Description
Select an Operation Type	<p>Select the type of operation to perform on the business objects in an SAP SuccessFactors application:</p> <ul style="list-style-type: none"> • CRUD: Displays the insert, upsert, update, and delete operations to perform on SAP SuccessFactors business objects. Select the operation and the business object on which to perform the operation. • SFQL: (SuccessFactors Query Language) enables you to define an SFQL-based query to send a request for querying a particular business object and retrieve the respective object's information, which is queried from the SAP SuccessFactors application. If you select this option, the page is refreshed to display a text box for entering a query. <p>Note: The SAP SuccessFactors Adapter does not currently support the LegacyLearning object.</p> <ul style="list-style-type: none"> – SFQL query statement: Enter a valid SFQL query in the text box. The query can include custom fields and parameters. For example: <pre data-bbox="824 888 1425 947">SELECT guid,name FROM Goal\$7 WHERE userid = 'USR-22'</pre> <p>Use the Find field to search for an entry in the SFQL query and the Go to Line field to go to a specific line in the SFQL query.</p> <p>The query can include custom fields and parameters.</p> <p>Use the inputBatchSize field to enter a batch size value to fetch a batch of records. You can specify the batch size as per your requirement. You can enter a numeric value between 1 and 800. The default value is 200.</p> <p>If you need to fetch more than the inputBatchSize value, use the <code>queryMore</code> operation. When you select SFQL as the operation type, a <code>querySessionId</code> field is added to the request mapping. The <code>querySessionId</code> element performs the <code>queryMore</code> operation in the ongoing session for the respective query. This can be mapped for passing the <code>sessionId</code> for the ongoing query to fetch another batch of records with the batch size being the inputBatchSize per request.</p> <p>To perform a simple query operation without bind parameters, map the <code>querySessionId</code> element in the mapper and pass it as blank in the request payload. If the query response contains more than the inputBatchSize elements, handle this scenario using a while loop instead.</p> <p>The <code>queryMore</code> operation, using <code>querySessionId</code>, cannot be performed if the session for an ongoing query has expired or your login session has been renewed. This design is similar because SAP SuccessFactors supports the <code>queryMore</code> operation. The <code>queryMore</code> operation can be implemented only in orchestrated integrations. For a use case that uses the <code>queryMore</code> operation, see About SAP SuccessFactors Adapter Use Cases.</p>

Element	Description
	<ul style="list-style-type: none"> – Binding Parameters: Displays any binding parameter, if included, in the specified query. For example, 'firstname' is a parameter in the following query: <pre>SELECT firstname,lastname FROM user WHERE firstname = '&firstname'</pre> <p>Enter a query with a parameter and press the Refresh button above Binding Parameters. A text box in which to enter a test value for the parameter is displayed.</p> – Test My Query: Click to validate the query against the SAP SuccessFactors application. The query response is displayed for a successful query. If the query is invalid, you receive a response for the errors in the query.
Filter by object name	<p>Enter the initial letters of an object name to display a range of objects. You can also select a filter type:</p> <ul style="list-style-type: none"> • All: Displays all objects available for the selected operation. • Custom: Displays objects that can be created in the SAP SuccessFactors application for the selected operation. These business objects are identified by special icon ('-'). For example, Goal-1, DevelopmentGoal-2002. • Standard: Displays business objects delivered as part of the SAP SuccessFactors application.
Select Business Objects (sfapiv1 API)	<p>Select a business object from the SAP SuccessFactors application (multiple objects are not supported). The selected operation acts on this business object. The SAP SuccessFactors API version that is displayed is based on the SAP SuccessFactors Cloud application version to which you are connected.</p>
Your Selected Business Objects	<p>Displays the selected business objects.</p>

Invoke System Query Options Page

If you selected **OData** with the **Search** or **Get** operation on the Operations page, the following options are displayed.

Element	Description
Configure \$expand query option. This allows you to expand navigation properties in response.	<p>Select this check box if you want to make use of the \$expand option in the query. As a result, the selected response property/properties appears/appear as expanded in the response.</p> <p>If you select this check box, the following options are displayed.</p> <ul style="list-style-type: none">• Expand UI<ul style="list-style-type: none">– Filter by navigation property name: Enter the initial letters of the navigation property name to filter the display of names in the list.– Configure expand parameters: Select the navigation property such as workOrderNav, userNav, and so on.– Your selected expand parameters: Displays the selected navigation property.• Expand Text<ul style="list-style-type: none">– Enter the Query: Enter a valid query statement. For example: toPaymentMethodAssignmentV3/ countryNav/currencyNav/statusNav– Click here to test query: Click Validate Query to validate the query. If a query is valid, a Success message is displayed. If the query is invalid, a Fail message is displayed.
Configure \$select option. This allows you to select only the required properties in response.	<p>Select this check box to limit the properties to receive in the response. If you do not select this check box, all the fields appear in the response by default.</p> <p>If you select this check box, the following options are displayed.</p> <ul style="list-style-type: none">• Filter by field name: Type the initial letters of the field name to filter the display of names in the list.• Configure fields: Select a field such as city, division, and so on.• Your selected fields: Displays the selected fields.

Summary Page

You can review the specified adapter configuration values on the Summary page.

Element	Description
Summary	<p>Displays a summary of the configuration values you defined on previous pages of the wizard.</p> <p>The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file.</p> <p>To return to a previous page to update any values, click the appropriate tab in the left panel or click Go back.</p> <p>To cancel your configuration details, click Cancel.</p>

4

Implement Common Patterns Using the SAP SuccessFactors Adapter

You can use the SAP SuccessFactors Adapter to implement the following common patterns.

Topics:

- [Fetch More than 800 Records from SAP SuccessFactors Using the queryMore Operation in SFQL](#)
- [Receive an Event from SAP SuccessFactors and Write the Event to the Target File Location](#)
- [Extract Employee Data from SAP SuccessFactors Employee Central](#)
- [Synchronize Candidate Data from SAP SuccessFactors Employee Central](#)

Fetch More than 800 Records from SAP SuccessFactors Using the queryMore Operation in SFQL

If you need to fetch more than 800 records at a time from SAP SuccessFactors, use the `queryMore` operation.

The SFQL query object retrieves the first 800 records from SAP SuccessFactors and creates a server-side `querySessionId`. The `queryMore` (SFQL) call processes subsequent records in up to 800-record chunks and returns a newly-generated `querySessionId` in the SAP SuccessFactors response. To iterate through records in the result set, you generally call `queryMore` (SFQL) repeatedly until all records in the result set have been processed (the `hasMore` flag is `true`). The while loop is exited only after no more records are returned by the query when the `hasMore` flag is `false`.

The response returned by SAP SuccessFactors for the SFQL operation has the following structure:

```
numResults
hasMore
querySessionId
```

- `numResults`: The `numResults` variable contains the number of records retrieved from SAP SuccessFactors.
- `hasMore`: The `hasMore` response is a boolean value. If it returns `true`, there are more records available to fetch. If it returns `false`, there are no more records available to fetch.
- `querySessionId`: The `querySessionID` stores the value of the last record retrieved from SAP SuccessFactors. Initially, it has no value; the local `querySessionID` is initialized with empty single quotes (' ').

Perform the following steps for implementing the `queryMore` operation in Oracle Integration:

1. Log in to Oracle Integration.
2. Create SOAP Adapter and SAP SuccessFactors Adapter connections.
3. Create an orchestrated integration.
4. Drag and drop an SOAP Adapter from the **Triggers** section to the trigger side and configure it.
5. Drag and drop an assign activity from the **Actions** section and create the following two variables:
 - `$hasMore ----- hardcoded hasMore= "true"`
 - `$querySessionId ---- hardcoded with an empty value`
6. Drag and drop a while loop activity and specify the condition `hasMore ='true'` in the while loop.
7. Drag and drop the SAP SuccessFactors Adapter inside the while loop and configure it with the following SFQL query. The query can be a normal or bind query.

```
Query : Select status from the user
Bind Query : Select status from the user where status='&status'
```

8. Create a mapping between the SOAP AdapterSAP SuccessFactors Adapter and the SAP SuccessFactors Adapter with the variable that you created in the assign activity for "hasMore".

```
hasMore(Variable)-----> status (Query input parameter)
```

9. After request mapping is completed, drag and drop one more assign activity next to the SAP SuccessFactors Adapter inside the while loop, and assign the `queryMore` response to the variables that you created in the first assign activity as follows:

```
$querySessionId -----> nsmpr2:querySessionId
$hasMore-----> nsmpr2:hasMore
```

10. Check the response received from SuccessFactors. The condition is first checked. If the condition is satisfied, the records are fetched.
 - If the `hasMore` value is `true`, then it enters into the while loop.
 - If the `hasMore` value is `false`, then the condition is not satisfied and the while loop is exited.

This completes the invoking of the `queryMore` operation in SuccessFactors. Further in your orchestration, you can add adapters and activities as per your business requirement.

Receive an Event from SAP SuccessFactors and Write the Event to the Target File Location

You can receive an event from SAP SuccessFactors and write the event to a target file location.

1. Create a SAP SuccessFactors Adapter trigger connection.
2. Create an FTP Adapter invoke connection.
3. Create an orchestrated integration.
4. Drag the SAP SuccessFactors Adapter connection to the trigger location and configure the adapter with the required event on the Events page (for example, the **Add Global Assignment** event, which is triggered when you add the global assignment to any user in the SAP SuccessFactors application). See [Add the SAP SuccessFactors Adapter Connection to an Integration](#).
5. Configure the FTP Adapter to write the event data that you receive from SAP SuccessFactors.
6. Activate the integration. The instructions on the Summary page of the Adapter Endpoint Configuration Wizard describe how to receive the subscribed event from SAP SuccessFactors.

Extract Employee Data from SAP SuccessFactors Employee Central

The SAP SuccessFactors Adapter supports the Compound Employee application programming interface (API). The SAP SuccessFactors Compound Employee API service is a SOAP web service used to extract employee data from SAP SuccessFactors Employee Central.

This use case describes how to extract employee data from SAP SuccessFactors Employee Central. In this use case, an FTP Adapter is used to write the data that you receive from SAP SuccessFactors to a file, but you can also use other applications.

1. Create a scheduled orchestration integration.
2. Drag an SAP SuccessFactors Adapter into the integration canvas as an invoke connection.
3. Configure the SAP SuccessFactors Adapter as follows:
 - a. On the Basic Info page, provide a name.
 - b. On the Operations page, select **SOAP**, and then select **SFQL** in the **Select an Operation Type** list.
 - c. Enter a valid SFQL query in the text box. The query can include custom fields and parameters. For example:

```
SELECT person, personal_information, address_information,  
phone_information FROM CompoundEmployee
```
 - d. Enter the batch size value.
 - e. Click **Test My Query**. The query response is displayed for a successful query. If the query is invalid, you receive a response for the errors in the query.
 - f. Review your selections on the Summary page.
4. In the mapper, set **querySessionId** as null or a blank value.
5. Drag an FTP Adapter into the integration canvas and configure the FTP endpoint to write the data that you receive from SAP SuccessFactors to a file.

6. In the mapper, map the response to the FTP write request.
7. Specify the tracking variable.
 - a. Click **Tracking**.
 - b. Drag the required variable to use for the tracking reference (for this example, **startTime** is selected).
8. Activate the integration.
9. After successful activation, you can submit the integration and monitor the runtime in Oracle Integration.

Synchronize Candidate Data from SAP SuccessFactors Employee Central

The SAP SuccessFactors Adapter supports the Candidate application programming interface (API). The SAP SuccessFactors Candidate API service is an ODATA web service used to extract employee data from SAP SuccessFactors Employee Central.

This use case describes how to extract candidate data from SAP SuccessFactors Employee Central. In this use case, a Marketo Adapter is used to synchronize the data that you receive from SAP SuccessFactors to create new records, but you can also use other applications.

1. Create a scheduled orchestration integration.
2. Drag an SAP SuccessFactors Adapter into the integration canvas as an invoke connection.
3. Configure the SAP SuccessFactors Adapter as follows:
 - a. On the Basic Info page, provide a name.
 - b. On the Operations page, select **OData**, select the **Candidate** entity, and then select **Get** from the **Select an Operation Type** list.
 - c. On the System Query Options page, select the **Configure \$expand query option. This allows to expand navigation properties in the response** checkbox.
 - d. Select the required navigation property from the **Configure expand parameters** list (for this example, **user** is selected).
 - e. Select the **Configure \$select option. This allows to select only the required properties in the response** checkbox to limit the properties to receive in the response.
 - f. Select the field that you selected in the navigation property (that is, **user**) and select other required fields (for this example, **cellPhone**, **lastName**, and **primaryEmail** are selected).
 - g. On the Summary page, review your selections.
4. In the mapper, provide the required input value for the **candidateId**.
5. Drag the Marketo Adapter into the integration canvas and configure it as follows:
 - a. On the Basic Info page, provide a name.
 - b. On the Action page, select **Create or Update Information**.

- c. On the Operations page, select the following details:
 - i. **Leads** object.
 - ii. **Sync Lead** operation.
 - iii. **Create Only** as sync action.
 - d. On the Summary page, review your selections.
 6. In the mapper, map the SAP SuccessFactors response to the **CreateLead** request.
 7. Specify the tracking variable.
 - a. Click **Tracking**.
 - b. Drag the required variable to use for the tracking reference (for this example, **startTime** is selected).
 8. Activate the integration.
 9. After successful activation, you can submit the integration and monitor the runtime in Oracle Integration.