Oracle® Cloud

Using the SAP Concur Adapter with Oracle Integration 3

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Oracle Cloud Using the SAP Concur Adapter with Oracle Integration 3,

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About This Content

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

Audience

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

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

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.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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Understand the SAP Concur Adapter

Review the following conceptual topics to learn about the SAP Concur 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:

> **Note**
>
> There are overall service limits for Oracle Integration. A service limit is the quota or allowance set on a resource. See Service Limits.

SAP Concur Adapter Capabilities

The SAP Concur Adapter enables you to integrate SAP Concur with Oracle Integration. You can configure the SAP Concur Adapter as an invoke connection in an integration in Oracle Integration.

Use the SAP Concur Adapter with Swagger API versions 3.0 and 3.1 to perform travel and expense operations and Swagger API version 4.0 to perform identity user retrieve operations.

The SAP Concur Adapter provides the following benefits:

- Requires no custom coding and the integration can be completed quickly without the need to hire a team of SAP Concur application programming specialists.
- Allows you to quickly import expense categories, employee data, customers, classes, and jobs.
- Eliminates duplicate manual data entry and achieve faster data synchronization.
- Provides support for SAP Concur's Extract API and Payment Batch API. SAP Concur's Extract Web Service enables you to request the extract of available data objects, such as approved expense reports, travel requests, and payment requests. SAP Concur's Payment Batch API enables you to manage payment batches and collect their batch files.
- Supports artifact regeneration. For example, when a new custom property is added in SAP Concur, you can view it in the mapper for an existing integration by clicking the SAP Concur Adapter and selecting **Refresh Endpoints**. See Refresh Endpoints for Integrations in *Using Integrations in Oracle Integration 3*.
- Supports implementing secure egress (dedicated NAT gateway) to establish a connection by using a private endpoint. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3* and Configure the Endpoint Access Type.

- Provides the Resource Owner Password Credential security policy and allows you to authenticate credentials at the company or user level.

> **Note**
>
> You must know your edition of the SAP Concur application to correctly configure the SAP Concur Adapter on the Connections page.
> See Identify the SAP Concur Application Edition.

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

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Connectivity Certification Matrix.

SAP Concur Adapter Use Cases

Common use cases for the SAP Concur Adapter are as follows:

- Create users and attendees synchronization with customer ERP/HCM systems.
- Retrieve payment balances to synchronize with a customer financial system.
- Create an expense and manage workflow approval process.
- Synchronize financial data in real time with a supply chain.

Workflow to Create and Add an SAP Concur 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	Decide where to work	• Work in a project (see why working with projects is preferred in *Using Integrations in Oracle Integration 3*). • Work outside a project.
2	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 Concur Adapter Connection
3	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Understand Integration Creation and Best Practices in *Using Integrations in Oracle Integration 3* and Add the SAP Concur Adapter Connection to an Integration

Step	Description	More Information
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in *Using Integrations in Oracle Integration 3*
5	(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 *Using Integrations in Oracle Integration 3*
6	Activate the integration.	Manage Integrations in *Using Integrations in Oracle Integration 3*
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in *Using Integrations in Oracle Integration 3*
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in *Using Integrations in Oracle Integration 3*
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in *Using Integrations in Oracle Integration 3*

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Create a SAP Concur 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

You must satisfy the following prerequisites to create a connection with the SAP Concur Adapter.

Identify the SAP Concur Application Edition

There are two types of SAP Concur application editions: Professional Edition and Standard Edition. Perform the following steps to identify the edition of the SAP Concur application you are using before creating an SAP Concur connection.

1. Sign in to the SAP Concur application.
2. In the left navigation pane, click the **Administration** (gear) icon.
3. Under **Administration**, select the **Expense** option.
   The **Expense Administration** module appears.

If...	Then...
You see **Expense Administration**.	Your organization is using the Professional Edition.
The **Expense Administration** option does not appear.	You are likely using the Standard Edition or a different edition.

4. If this menu is not clear, you can also:
   - Check with your SAP Concur administrator or SAP Support for confirmation.
   - Review your licensing information or contract details in the Company Admin section.

Obtain the Client ID and Client Secret

The SAP Concur administrator must perform the following tasks to obtain the client ID and client secret.

1. Sign in to the SAP Concur application.
2. In the left navigation pane, click the gear icon labeled **Administration**.
3. Select **Company** from the expanded menu.
4. Select **Authentication Admin** under the **Company** submenu.
5. Click **OAuth 2.0 Application Management**.

   This opens the application list where you can manage and create OAuth 2.0 apps.
6. Click **Create New App** in the Application list page.
7. Fill in the details on the Create New App page:

Element	Description
App Name	Update the app name: *Company_Name - description_text today's_date* • Manually replace *Company_Name* and *today's_date* with your own values. • Update *description_text* with a description appropriate for your environment.
App Type	Leave blank.
App Description	Update the app name: *Company_Name - Client_Web_Services_PROD today's_date* • Manually replace *Company_Name* and *today's_date* with your own values. • Update *description_text* with a description appropriate for your environment.
Allowed Grants	Select **refresh_token**, **password**, and **client_credentials**.
Allowed Scopes	Add all or restrict, as needed.
Principals	Leave unchecked.

8. Click **Submit** to create the app.

Enable the APIs

The SAP Concur administrator must perform the following steps to enable APIs for a registered OAuth 2.0 application.

1. Sign in to the SAP Concur application.
2. In the left navigation pane, click the **Administration** (gear) icon.
3. Select **Company** from the expanded menu.
4. Click **Authentication Admin**.
5. Click **OAuth 2.0 Application Management**.
6. Click the registered application or click **Create New App**.

7. In the **Grants/Scopes** section, select the following:

Element	Description
Allowed Grants	Select **refresh_token**, **password**, and **client_credentials**.
Allowed Scopes	Select all scopes required for API operations (such as **extract** or **payment batch**).

8. Click **Submit** to save the changes.
The APIs are enabled for this application by the scopes you selected.

Enable the Permissions for the Extract API and Payment Batch API for the Registered Application

The SAP Concur administrator must perform the following steps to enable the permissions specifically for the Extract API and Payment Batch API for a registered OAuth 2.0 application.

1. Sign in to the SAP Concur application.
2. In the left navigation pane, click the **Administration** (gear) icon.
3. Select **Company** from the expanded menu.
4. Click **Authentication Admin**.
5. Click **OAuth 2.0 Application Management**.
6. Click the registered application to view the details.
7. Click **Edit**.
8. Under **Grants/Scopes**, ensure the following scopes are selected in the **Allowed Scopes** section.
   - Scope for the Extract API (such as **extract.read**)
   - Scope for the Payment Batch API (such as **paymentbatch.write**)
9. Click **Submit** to apply permissions.
The registered application now has access to the Extract API and Payment Batch API as per the selected scopes.

> **Note**
>
> In the new SAP Concur user interface, enabling API permissions is managed by selecting the appropriate scopes during OAuth 2.0 application creation or editing in the OAuth 2.0 Application Management section. There is no longer a separate Modify dialog or checkboxes to enable APIs for registered applications. Scopes directly determine which APIs and operations are permitted for the integration.

Obtain the Company UUID and Company Request Token

The SAP Concur administrator must perform the following tasks to obtain the company universally unique identifier (UUID) and company request token.

1. Sign in to the SAP Concur application.
2. In the left navigation pane, click the **Administration** (gear) icon.

3. Select **Company** from the expanded menu.
4. Click **Authentication Admin**.
5. Under **Authentication Admin**, select **Company Request Token**.
6. Enter your app ID (which is the client ID generated by your OAuth 2.0 application).
7. Click **Submit**.

   The system displays the company UUID and company request token.
8. Copy and save both values securely.
9. Enter the company UUID in the **Username** field and the company request token in the **Password** field when configuring Resource Owner Password Credential - Company Level authentication.

> **Note**
>
> The company request token expires after 24 hours. To regenerate it, re-enter the app ID (client ID) and click **Submit** again.

Create a Connection

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

> **Note**
>
> You can also create a connection in the integration canvas. See Define Inbound Triggers, Outbound Invokes, and Actions.

To create a connection in Oracle Integration:

1. Decide where to start:
   - Work in a project (see why working with projects is preferred).
     a. In the navigation pane, click **Projects**.
     b. Select the project name.
     c. Click **Integrations**  .
     d. In the **Connections** section, click **Add** if no connections currently exist or **+** if connections already exist. The Create connection panel opens.
   - Work outside a project.
     a. In the navigation pane, click **Design**, then **Connections**.
     b. Click **Create**. The Create connection panel opens.
2. 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.
3. 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	Select the role (direction) in which to use this connection. **Note**: *Only* the roles supported by the adapter you selected are displayed for selection. Some adapters support all role combinations (trigger, invoke, or trigger and invoke). Other adapters support fewer role combinations. 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. 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.
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	**Note**: This field only appears if you are creating a connection in a project. Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects. 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.

4. Click **Create**.

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

5. Follow the steps to configure a connection.
   The connection property and connection security values are specific to each adapter. Your connection may also require configuration with an access type such as a private endpoint or an agent group.

6. Test the connection.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. In the **Concur Instance URL** field, enter the URL for the SAP Concur application host location. This is the same URL that you use to log in to SAP Concur.

   The URL to specify is based on where the application is hosted:

   - USA: `https://www.concursolutions.com`
   - EMEA: `https://eu1.concursolutions.com`
   - China: `https://cn.api.concurcdc.cn/api/version`
     In addition to these URLs, the SAP Concur Adapter supports the following URLs for APIs that are using the Resource Owner Password Credentials (ROPC) security policy:
     - US: `https://us.api.concursolutions.com`
     - EMEA: `https://emea.api.concursolutions.com`
     - China: `https://cn.api.concurcdc.cn`
3. In the **Edition** field, select the SAP Concur application edition. You must know whether you are using the Professional Edition or Standard Edition. See Identify the SAP Concur Application Edition.
4. Under the **Optional properties** section:
   a. Specify the preferred authentication level for credentials (either company-level or user-specific) for your connection in the **Resource Owner Password Credential – Authentication Level** field. This configuration allows you to configure the Resource Owner Password Credentials (ROPC) security policy according to your connection's requirements.

   > **Note**
   >
   > If no option is selected, Resource Owner Password Credential - Default is used, necessitating user-specific credentials for the ROPC security policy.

   b. Select an API version from the **Swagger API Version** list:
   - **v3.0 v3.1**
   - **v4.0**

   > **Note**
   >
   > If no option is selected, **v3.0 v3.1** (together known as v3 Swagger APIs) is considered the default Swagger API version.

Configure Connection Security

Use this procedure to configure security for your SAP Concur Adapter connection.

1. Go to the **Security** section.

2. In the **Client Id** field, enter the client ID.
3. In the **Client Secret** field, enter the client secret.

> **Note**
>
> The client ID is a unique Universally Unique ID (UUID) identifier for your SAP Concur application. You can obtain the client ID and client secret from your Partner Account Manager.

4. In the **Username** field, enter the user name for the SAP Concur account based on the chosen authentication level for credentials in the **Resource Owner Password Credential – Authentication Level** field. This can be either company-level or user-specific, depending on your configuration preference. For company-level, enter the company UUID. See Obtain the Company UUID and Company Request Token.
5. In the **Password** field, enter the password for the SAP Concur account based on the selected verification level for credentials in the **Resource Owner Password Credential – Authentication Level** field. This can be either company-level or user-specific, depending on your configuration preference. For company-level, enter the company request token. See Obtain the Company UUID and Company Request Token.

> **Note**
>
> The company request token expires after 24 hours. You must regenerate the token. See Obtain the Company UUID and Company Request Token.

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

1. Go to the **Access type** section.
2. Select the option for accessing your endpoint.

Option	This Option Appears If Your Adapter Supports ...
Public gateway	Connections to endpoints using the public internet.

Option	This Option Appears If Your Adapter Supports ...
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 Console. Failure to do so results in errors when testing the connection. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3* and Troubleshoot Private Endpoints in *Using Integrations in Oracle Integration 3*.

Ensure Private Endpoint Configuration is Successful

- To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud 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**.

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: • **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.

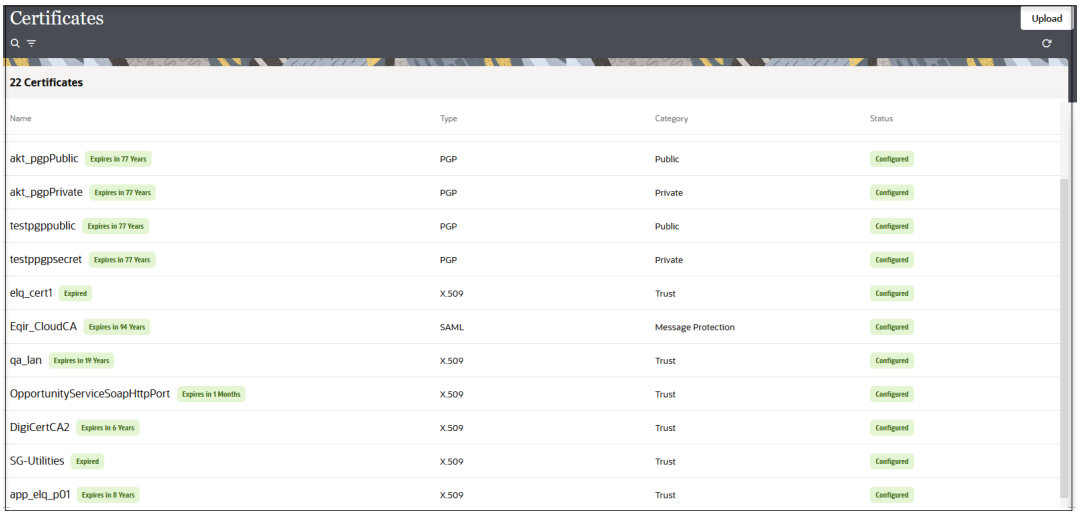
2. Wait for a message about the results of the connection test.
   - If the test was successful, then the connection is configured properly.
   - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection 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 certificate expiration date, status, and type. Certificates installed by the system cannot be deleted.



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 RSA Signature Validation 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**.

3

Add the SAP Concur Adapter Connection to an Integration

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

These topics describe the wizard pages that guide you through configuration of the SAP Concur Adapter as an invoke in an integration. The SAP Concur Adapter cannot be used as a trigger in an integration.

Topics:

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: • 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: `This connection receives an inbound request to synchronize account information with the cloud application.`

Invoke API Option Page

Select the APIs to use.

Element	Description
API	Select the API to use in the integration. • **Swagger API**: Enables you to perform create, update, delete, and get operations in the SAP Concur application. • **Extract API**: Enables you to request the extract of available data objects, such as approved expense reports, travel requests, and payment requests. • **Payment Batch API**: Enables you to manage payment batches and collect their batch files. **Note**: The payment Batch API is not available for selection if you are using SAP Concur's Professional Edition.
API Description	Describes the selected API.

Invoke Operations Page

Select the SAP Concur Adapter invoke operation values for your integration.

You identify the operation type and the operations to perform in the SAP Concur application.

Element	Description
Select Module (Appears only if you select **Swagger API** on the API Options page and **v4.0** from the **Swagger API Version** list on the Connections page.)	Select the module: • **Identity APIs**
Select Operation Type - **Swagger API** option (Appears only if you select **Swagger API** on the API Options page.)	If you selected **Swagger API** on the API Options page, these are the available operations: • **Create** • **Update** • **Delete** • **Get** **Note**: Only the **Get** option is supported for Swagger API version v4.0.
Select Operation – Swagger API option	• If you select Swagger API Version as **v3.0 v3.1** on the Connections page, the list of operations that support the Create, Update, Delete, and Get operations are displayed for selection (for example, **Create a new attendee**, **Create a new purchase order**, **Update purchase order receipt**, **Delete a vendor by vendor code**, and **Get a receipt image URL**). • If you select Swagger API Version as **v4.0**, only the following Get operations appear for selection. – **Retrieve Users** – **Retrieves User Identity Profile**

Element	Description
Select Operation - **Extract API** option	If you selected **Extract API** on the API Options page, these are the available operations: • **SubmitJobRequest**: Submits a job request. After selecting this option, you select an extract corresponding to the job to post to the SAP Concur application. The response of this operation contains the link (**status-link**) to track the status of the submitted job. The Summary page of the **SubmitJobRequest** operation shows the file headers of the file(s) returned after the job is completed. You can use the **RetrieveFile** operation to get the extract file(s) for the job and use the file headers on the Summary page for further processing of the file(s). **Note**: In SAP Concur Standard Edition, only jobs for Invoice GL Extract can be submitted, as provisioned by SAP Concur. • **Getjobdetails**: Fetches the details of the past 100 jobs submitted to the SAP Concur application corresponding to the extract you select. • **GetJobstatus**: Takes **jobStatusLink** as input in the payload and returns the status of the job. **Note**: – The **Status** element's value (the status of the job) in the response is **2**, as returned by SAP Concur if the job is completed. – The link for the extract file is not available in the response until the job status is completed. – The **jobStatusLink** is returned by the **SubmitJobRequest** or **GetJobDetails** operation in the response. • **RetrieveFile**: Takes **file-link** as input in the payload and returns a CSV file(s) (if **file-link** returns a ZIP, extraction is handled by the adapter) based on the response of the respective **file-link**. You can use the **RetrieveFile** operation to get the extract data corresponding to the file link. The **RetrieveFile** operation downloads the file to a virtual file system (VFS) directory. The VFS location of the downloaded file is returned in the response of the **RetrieveFile** operation, along with the file(s) name. **Note**: The **file-link** value is used as the URI when retrieving the extract data. You cannot get the **file-link** until the job is in a running stage.
Select Operation - **Payment Batch API** option	If you selected **Payment Batch API** on the API Options page, these are the available operations with SAP Concur's Standard Edition: • **CloseBatch**: Closes the specified batch based on the payment batch you select. This prevents any new expenses from entering. The batch list corresponding to the SAP Concur instance is displayed. You must select the payment batch required to be closed from the Select Payment Batch section. A request is sent to the SAP Concur application to close the respective batch. After the batch is closed, SAP Concur creates the batch file containing the expense information. The response of this operation contains the link (**file-link**) to get the corresponding Payment Batch file(s) by using this link as input to the **RetrieveFile** operation. • **RetrieveFile**: Gets the file for the corresponding batch once the batch is closed. This operation takes **file-link** as input in the payload and returns a CSV file(s) (if the **file-link** returns a ZIP, extraction is handled by the adapter) based on the response of the respective **file-link**.
Select Extract	Selects the extract to perform.

Element	Description
Select Payment Batch	Select the payment batch.

> **Note**
>
> SAP Concur has deprecated several of its Swagger APIs. Oracle Integration will support new versions of these APIs in the upcoming release. See Deprecated and Decommissioned APIs for more details.

Summary Page

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

Element	Description
Summary	Displays a summary of the configuration values you defined on previous pages of the wizard. 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. To return to a previous page to update any values, click the appropriate tab in the left panel or click **Go back**. To cancel your configuration details, click **Cancel**.

4

Implement Common Patterns Using the SAP Concur Adapter

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

Topics:

Synchronize Campaign Cost Data Between Salesforce.com and SAP Concur

This use case describes how the SAP Concur Adapter is used to synchronize campaign cost data between Salesforce.com and SAP Concur in real-time.

- A new campaign is created in Salesforce.com.
- Campaign data is sent from Salesforce.com to the SAP Concur Adapter.
- The SAP Concur Adapter sends the campaign data to SAP Concur.
- Campaign data from Salesforce.com is used to populate the campaign name and campaign cost fields in an SAP Concur expense report.
- When the campaign costs change in Salesforce.com, the updated data is sent to the SAP Concur Adapter and then SAP Concur where the expense report is updated.

Use the Extract API in a Scheduled Orchestrated Integration

This use case provides a high level overview of how to submit a job, get job status, and retrieve the extract data of the job created by using the SAP Concur Adapter Extract API.

1. Select and configure the SAP Concur Adapter on the Connections page.
2. Create a scheduled orchestrated integration.
3. Drag the SAP Concur Adapter into the integration as an invoke connection.
   a. On the API Option page, select **Extract API**.

      This API enables you to request the extract of available data objects, such as approved expense reports, travel requests, and payment requests.

   b. On the Operations page, select **SumbitJobRequest** from the **Select Operation** list to configure the SAP Concur Adapter to submit the job.
4. In the request mapper, map **startTime** to **POST**.
5. Add an assign activity.
   a. Create two variables to store the status of the job (for this example, named **done**) and a file link to retrieve the file (for this example, named **Filelikvar**).

6. Configure a while action below the assign action to check the status for the submitted job.
   a. Configure the condition for the status (**“done! =2”**).

> **Note**
>
> The status of the job is **2** if the job is completed. This is returned by SAP Concur.

7. Drag a second SAP Concur Adapter inside the while loop and configure the adapter to get the job status.
   a. On the API Option page, select **Extract API**.
   b. On the Operations page, select **GetJobStatus** from the **Select Operation** list.
8. Map **status-link** from the **SubmitJobRequest** operation’s response to **JobStatusLink** in the request of the **GetJobStatus** operation.
9. Drag a switch action into the integration.
   a. Configure the condition for the **status** variable to check the job status.
10. Drag an assign action in the switch action to update the status.

    If the status is completed (that is, **status = ”2”**), it is updated in the variable created in Step 5.
    a. Update **done** to **status** and **Filelikvar** to **file-link**.
    b. In the **Otherwise** condition of the switch action, drag a wait action.
    c. Configure the wait action to wait for **2** minutes.
11. Drag a third SAP Concur Adapter connection outside of the while action.
    a. On the API Option page, select **Extract API**.
    b. On the Operations page, select the **RetrieveFile** operation. The **RetrieveFile** operation downloads the file to a virtual file system (VFS) directory. The VFS location of the downloaded file is returned in the response of the **RetrieveFile** operation along with the file(s) name.
12. In the mapper, map **$Filelikvar** to **file-link**.
13. Drag a for-each action into the integration.
    a. Name the activity (for this example, `foreach` is entered).
    b. Drag the **files** element from the response of **RetrieveFile** to the **Repeating Element** field.
    c. Enter a name in the **Current Element Name** field (for this example, `FileTemp` is entered).
    d. Click **Create** and complete for-each action configuration.
14. Drag a stage file action inside the for-each action to read the downloaded result.
    a. Provide a name, and then click **Next**.
    b. Select **Read Entire File** from the list.
    c. In the **Specify the File Name** field, provide the file name for the stage file action response.
    d. For the **Specify the Directory to read from** field, provide a file location.

You now create a schema based on the sample headers mentioned on the Summary page of the **SubmitJobRequest** operation for each extract.

e. On the Schema Options page, select **Create a new schema from a CSV file**, which maintains the response file structure.

f. On the Schema Options page, select the CSV file.

g. Check the configuration in the Summary page.

15. Drag an FTP Adapter connection below the stage file action configured to read the retrieved files.

    a. On the Operations page, select the **Write File** operation.

    b. On the Schema page, select to create a new schema.

    c. On the Format Definition page, select a sample CSV file that maintains the response file structure (for this example, **InvoiceGLEExtract.csv** is selected). This is the same CSV file selected for the stage file action.

16. In the mapper, map the stage file action response elements to FTP Adapter request elements.

17. Add the tracking variable:

    a. In the upper-right corner, select **Tracking** from the **Actions** menu.

    b. Drag a tracking variable.

18. Activate the integration.

19. From the **Actions** menu at the far right for this integration, select **Submit Now**.

    You receive a run ID. You can monitor the flow using this run ID.

    The integration is deployed and the web service is ready to accept requests.

5

Troubleshoot the SAP Concur Adapter

Review the following topics to learn about troubleshooting issues with the SAP Concur Adapter.

Topics

Additional integration troubleshooting information is provided. See Troubleshoot Oracle Integration in *Using Integrations in Oracle Integration 3* and the Oracle Integration Troubleshooting page on the Oracle Help Center.

Troubleshoot SAP Concur Adapter Connection Issues

The following issues can occur when using the SAP Concur Adapter. Review the following table to identify solutions for these issues.

Issue	Solution
Why is the Payment Batch API not visible in the Adapter Endpoint Configuration Wizard?	You may have selected Professional Edition on the Connections page instead of Standard edition and provided credentials for the Standard Edition, or vice versa. Identify your SAP Concur edition and provide the correct credentials. See Identify the SAP Concur Application Edition. Also, check whether the Payment Batch API is enabled. You must enable the permissions for the Extract API and Payment Batch API for the registered application as a prerequisite to configuring the SAP Concur Adapter. See Enable the Permissions for the Extract API and Payment Batch API for the Registered Application.
Why am I unable to see the Payment Batch API after changing the edition to use Standard Edition instead of Professional Edition on the Connections page?	1. In the navigation pane, click **Integrations** > **Connections**. 2. On the Connections page, click  at the far right for the respective connection, and select **Refresh Metadata**.
Why is the SubmitJobRequest operation for the Extract API not visible in the Adapter Endpoint Configuration Wizard?	You may have selected Standard Edition on the Connection page and provided credentials for the Professional Edition. Identify your SAP Concur application edition and provide the correct credentials. See Identify the SAP Concur Application Edition.
Why is the Extract API/Payment Batch API not visible in the Adapter Endpoint Configuration Wizard while configuring the SAP Concur Adapter connection for the Standard Edition?	You need to enable the Extract API/Payment Batch API in the SAP Concur application. See Enable the Permissions for the Extract API and Payment Batch API for the Registered Application.

Issue	Solution
Why does the SAP Concur Adapter show the error `Unable to configure the operations` once you select the Extract API in the SAP Concur Adapter?	You need to enable the Extract API/ Payment Batch API in the SAP Concur application. See Enable the Permissions for the Extract API and Payment Batch API for the Registered Application.
Why am I unable to see the option **Register Partner Application** in the SAP Concur portal? I need to complete the necessary prerequisites for establishing a connection with the SAP Concur Adapter.	Ensure that you are logged in as an SAP Concur administrator to complete the necessary prerequisites for establishing a connection with the SAP Concur Adapter. If you are unable to see options such as **Register Partner Application** after logging in as an SAP Concur administrator, this may be due to privilege issues. In such cases, it is recommended that you contact the SAP Concur support team for further assistance and troubleshooting.
Do I have to enter the client ID and client secret for the Concur Resource Owner Password Credentials Policy?	The Resource Owner Password Credentials security policy requires the client ID, client secret, user name, and password whereas the Concur Resource Owner Password Credentials Policy (deprecated) required the consumer key, consumer secret, user name, and password. SAP Concur has deprecated the Concur Resource Owner Password Credentials Policy. However, if you import the older IAR file into an instance with new release details, you may see **Client Id** and **Client Secret** fields. You don't need to enter details for these fields and can continue defining the connection with the necessary parameters described in Create a Connection. Oracle Integration is working on this known issue and corrections will be reflected in an upcoming release.