



AI Adapter for SAP Integration Suite

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1 Introduction

1.1 Objective

This is the official guide for the AI Adapter for SAP Integration Suite. This guide covers all relevant information for integration developers to start working with the AI adapter. Read this guide carefully before using the adapter.

1.2 Coding Samples

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. The correctness and completeness of the Code given herein are not guaranteed.

1.3 Internet Hyperlinks

The documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. The availability and the correctness of this related information or the ability of this information to serve a particular purpose are not warranted.

1.4 Overview

AI Adapter for SAP Integration Suite facilitates and accelerates connectivity to Generative AI Hub (SAP AI Core) and other AI providers. The two variants available are, AICore-GenAIHub and Custom-OpenAI-REST.

AICore-GenAIHub variant allows you to connect to orchestration services in SAP AI Core. This service enables the use of various generative AI models with a unified code, configuration, and deployment.

The Custom-OpenAI-REST variant of the AI adapter works with the APIs of OpenAI that allows developers to access and integrate with artificial intelligence models into their applications, enabling tasks like text generation, image creation, and more.

1.5 Features

The AI Adapter has the following features:

- AI Adapter has two variants available: **AICore-GenAIHub** and **Custom-OpenAI-REST**.
- AI Adapter supports **OAuth2 Client Credential** (*User Credentials*) and **API Key alias** (*Secure Parameter*) authentication methods for the AICore-GenAIHub and Custom-OpenAI-REST variant respectively.
- AICore-GenAIHub employs harmonized API to allow you to use different foundation models without changing the client code.
- You can configure orchestration to enable consumption of **multiple GenAI models** within a single workflow.
- Custom-OpenAI-REST allows you to access a range of features using APIs like **Chat Completions, Platform** and **Responses**.
- Custom-OpenAI-REST supports **Basic** configuration type that provides a convenient processing capability for supported versions whereas **Advanced** enables proficient users to perform calls with greater control while connecting to any API endpoint.

2 Installation and Configuration

This section details the prerequisites to install and configure the AI adapter.

 The AI adapter is available as part of your SAP Integration Suite license.

2.1 Adapter Installation on Cloud Foundry

Before the AI adapter can be used in the Cloud Foundry environment, it must be deployed to the SAP Integration Suite tenant.

2.1.1 Prerequisite

To deploy the AI adapter, you must have access to *“AI Adapter for SAP Integration Suite”* as part of your SAP Integration Suite license.

2.1.2 Procedure

 The below installation procedure is compatible with Apache Camel 2, Apache Camel 3, and Edge Integration Cell (EIC) platform.

You can deploy the adapter using the following methods:

2.1.2.1 Adapter Installation by Creating a New Integration Flow

The AI adapter is available for selection in the Sender and Receiver adapter list and can be deployed in the **Design** tab directly as you use it in an Integration flow.

Purpose

To install an adapter for use in your Integration flow.

Procedure

Go to **Design** workspace and select the integration package where you want to create a new Integration flow.

1. Click **Edit** to make the package editable.

2. Go to the **Artifacts** tab. Click **Add** and select **Integration Flow**.
3. Enter the **Name** and **ID** for your flow. Additionally, select **Runtime Profile** from the drop-down and choose **Sender** and **Receiver** systems from the list . Finally, click **Add** to create the integration flow.
4. Go to the newly created integration flow and click **Edit** to make it editable.
 - i) For the Sender, in the integration flow add a **Connector**  between the **Sender box** and the **Start**.
 - ii) For the Receiver, in the integration flow, click **End** to add a **Connector**  between the **End** and the **Receiver Box**.
5. A drop-down with the available adapters appears. The **AI** adapter should show up in the list.
6. Select the **AI** adapter from the list.

The adapter is now imported which *triggers* an adapter deployment. Once the AI Adapter is deployed, a success message is *displayed*.

After the above steps are done, the AI Adapter is successfully deployed in your **Design** workspace of the SAP Integration Suite tenant.

2.1.2.2 Adapter Installation without Creating a New Integration Flow



The following procedure describes how the AI adapter is migrated from the Discover workspace to the Design workspace of the SAP Integration tenant.

This method is useful for scenarios where integration flow packages are migrated from development to a higher environment such as Production. The AI adapter can be imported into the Design workspace without creating an integration flow.

Use the Transport Management Service (TMS) to import/transport the AI adapter to a higher environment. Alternatively, if the TMS is not available in the landscape, the adapter package can be imported into the Design workspace by copying it from the Discover workspace.

Purpose

To import the AI adapter to **Design** workspace by copying the integration package from **Discover** workspace.

Procedure

1. Go to **Discover** workspace.
2. In the search box, search for **AI Adapter for SAP Integration Suite** package.
3. Select the package and click **Copy**.
This copies the package from the Discover workspace to Design workspace.
4. Go to Design workspace and select the copied **AI Adapter for SAP Integration Suite** package.
5. In the **Actions** tab of the selected package, click **Deploy**.

This completes the adapter deployment to **Design** workspace.

2.1.3 Monitor the Deployment Status

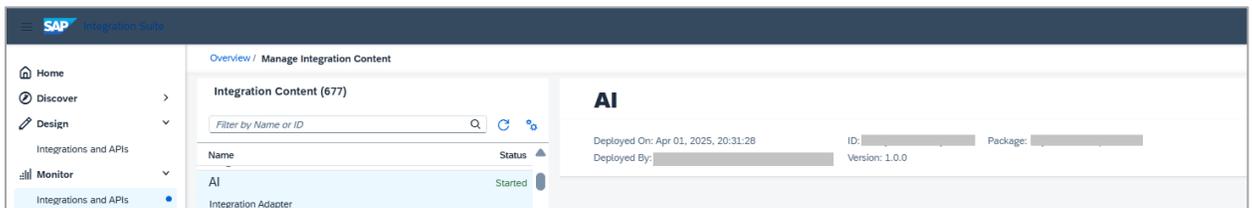
After the adapter deployment is complete, you can check the status in the **Monitor** section.

Purpose

To check the status of the deployed adapter.

Procedure

1. Under the **Monitor** tab, click **Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Integration Content** section and click **All**. This opens **Integration Content** page with a list of all the deployed adapters.
3. Here, you can check and confirm the deployment status of your adapter.



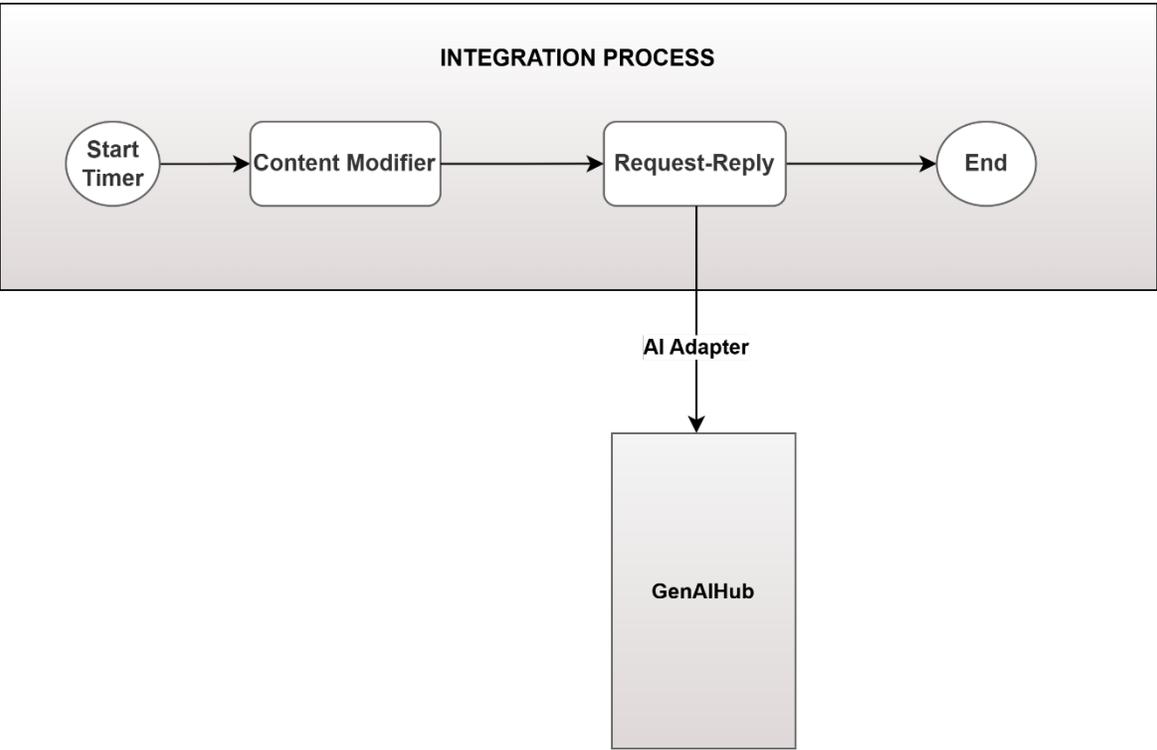
3 Getting Started: AI Adapter

Before you start using the adapter, you can get to know underlying [Architecture](#) for the adapter and [Application Configuration](#) for AI.

3.1 Architecture Overview

How AI Adapter Works: The AI adapter is designed to function as a receiver adapter. In such a scenario where the adapter is used as a receiver adapter, SAP Integration Suite acts as the initiator of the calls.

SAP Integration Suite tenant sends the operation request to GenAI Hub (SAP AI Core) or OpenAI which works on the request and sends the data back to the SAP Integration Suite tenant.



3.2 Application Configuration

Below are few links to get you started with the application configuration required before you start using the adapter.

3.2.1 GenAIHub in SAP AICore



For GenAIHub variant, you need an SAP AI Core service instance and service key. Also, you must use the SAP AI Core extended service plan.

- To get started with GenAIHub, see [Getting Started with GenAIHub](#).
- To consume GenAI models using Orchestration, see [AI Core Orchestration Consumption](#).

3.2.2 OpenAI



As a prerequisite, you must create an OpenAI Account and obtain an API Key to make API calls.

- To get started with OpenAI, see [OpenAI Tutorials](#).
- For more information to set up Authentication, see [API Keys](#).

3.3 Authentication

AI Adapter supports **OAuth2 Client Credential** (*User Credentials*) and **API Key alias** (*Secure Parameter*) authentication methods for the AICore-GenAIHub and Custom-OpenAI-REST variants respectively.

For more information about where to use these parameters, see **Connection** tab.

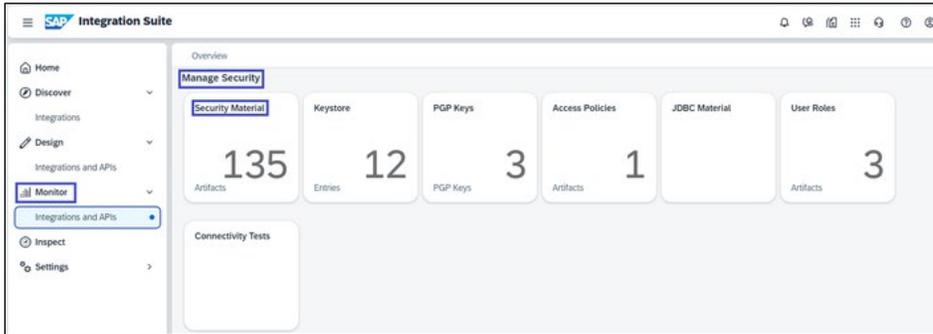
3.3.1 Creating an OAuth2 Client Credential

Purpose

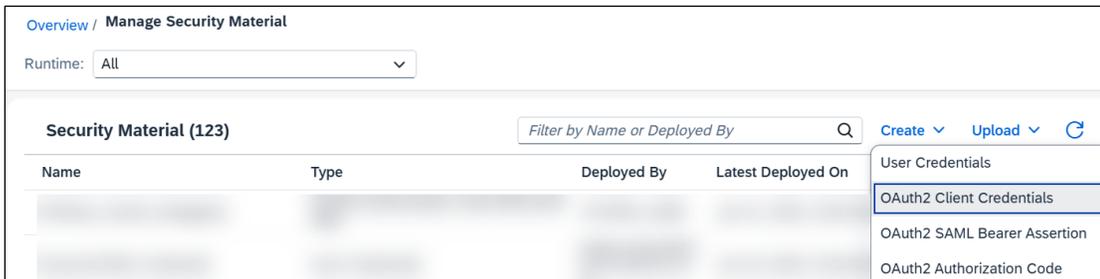
To create credentials in Security Material for **OAuth2 Client Credentials**.

Procedure

1. In SAP Integration Suite, navigate to **Monitor > Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Security** section and click **Security Material**.



3. On **Manage Security Material** page, click **Create** to select **OAuth2 Client Credentials** from the dropdown.



4. In the **Create OAuth2 Client Credentials** popup, provide the below details.

Parameter	Description
Name	Specify the name for the credentials.
Description	Specify the description for the credentials.
Token Service URL	Specify the URL of the OAuth2 authorization server that issues the access token. Example: <code>https://<tenant_id>/oauth/token</code>
Client ID	Specify the ID of the client to which you are connecting.
Client Secret	Specify the Secret key of the client to which you are connecting.

Parameter	Description
	OAuth2 uses a multiple step authentication pattern: Client credentials (Client ID and Client Secret, as specified in the artifact) are used by the client application to initially request an access token. The access token is then used to authorize the client (for as long as the token is valid) to access the server's resources (for example, the resources that are used in the associated integration flow). In many OAuth2 scenarios, the access token is issued (or generated) by an authorization server.
Client Authentication	<p>Select the Client Authentication which allows you to access an application using Client ID and Client Secret.</p> <p>By default, the Send as Body Parameter is selected, this option sends the Client ID and Client Secret as a JSON content to the authentication server in the request body.</p> <p>Example: Send as Request Header</p>
Scope	Specify the OAuth2 scope information to be included in the request body.
Content Type	<p>Select content type to indicate the media type.</p> <div style="background-color: #e6f2ff; padding: 5px; border: 1px solid #add8e6;"> <p> To use application permissions in the adapter, deploy an OAuth2 Client Credential security artifact and ensure Content Type is set to 'application/x-www-form-urlencoded'</p> </div>
Resource	Specify the identifier of the application or service that shares the same client secret. The identifier varies depending on the service that you want to connect with.
Audience	Specify the identifier of the application or service that shares the same client secret. The identifier varies depending on the service that you want to connect with.

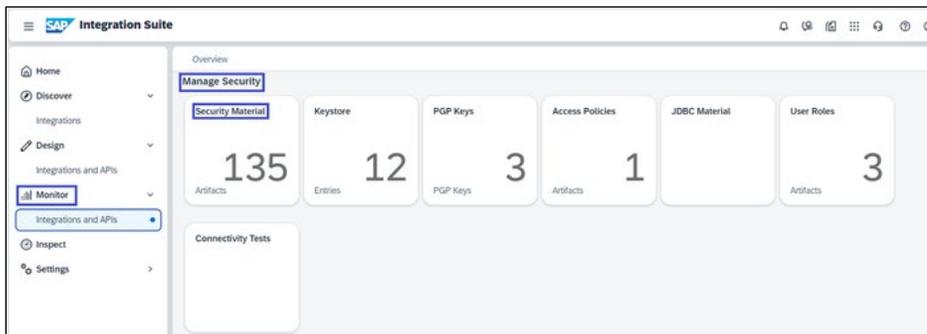
5. Click **Deploy** to complete the process.

When you refresh the **Manage Security Material** page, the new artifact is displayed (with Type **OAuth2 Client Credentials**) in the artifact table.

3.3.2 Creating a Secure Parameter

The creation of credentials to support the authentication mechanism can be done by the steps below:

1. In SAP Integration Suite, navigate to **Monitor > Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Security** section and click **Security Material**.



3. On **Manage Security Material** page, click **Create** and select **Secure Parameter** from the dropdown.



4. In the Create Secure Parameter popup, provide the below details.

Parameter	Description
Name	Specify the name of the security artifact. The artifact name is used as an alias for the confidential data.
Description	Enter a description for the artifact (optional).
Secure Parameter	Enter the confidential value of the attribute.

Parameter	Description
	For more information to set up Authentication, see API Keys .
Repeat Secure Parameter	Repeat the confidential value of the attribute.

5. Click **Deploy** to complete the process.

When you refresh the **Manage Security Material** page, the new artifact is displayed (with **Secure Parameter**) in the artifact table.

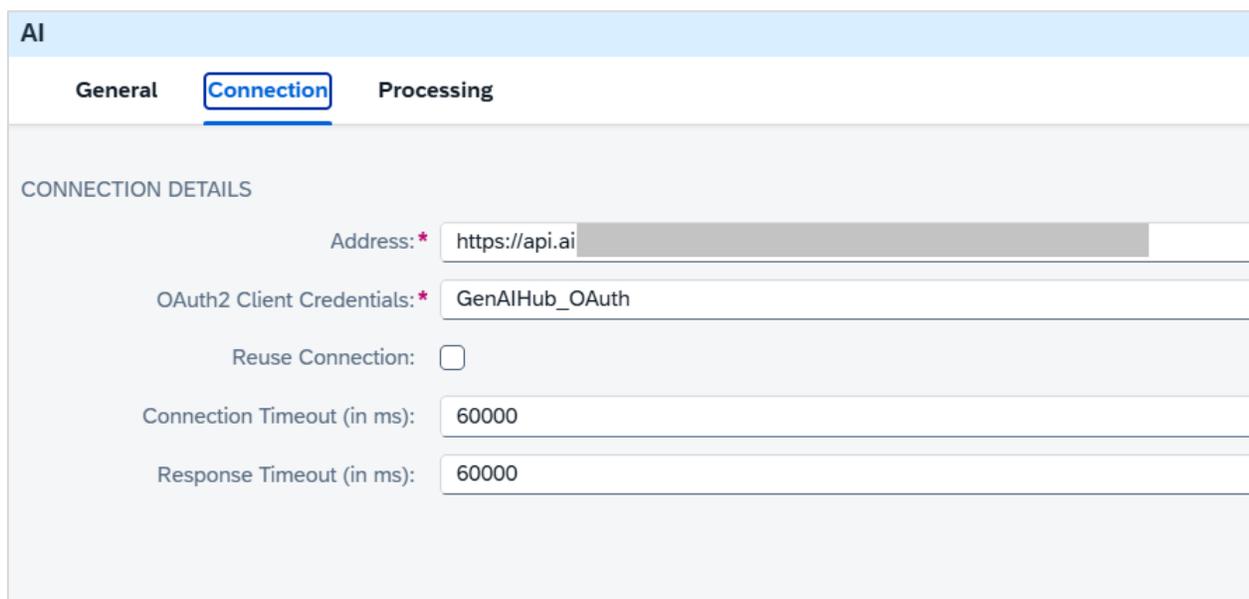
4 AI Adapter Configuration

This section describes the parameters to be configured for the AI Adapter. You need to configure the **Connection** and **Processing** tabs. A description and example usage for each field has been added.

4.1 AICore-GenAIHub

4.1.1 Connection Tab

The **Connection** tab contains connection and authentication parameters for AI Adapter.



The screenshot shows the 'AI' configuration page with the 'Connection' tab selected. The 'CONNECTION DETAILS' section includes the following fields:

- Address:** * (with a greyed-out portion)
- OAuth2 Client Credentials:** *
- Reuse Connection:**
- Connection Timeout (in ms):**
- Response Timeout (in ms):**

The connection tab contains the following fields:

Parameter	Description
Address	Specify the GenAIHub address. Example: <code>https://api.ai.{tenant_name}.ml.hana.ondemand.com</code>

Parameter	Description
OAuth2 Client Credentials	Specify the name of the OAuth2 Client Credentials security artifact. For more information, see OAuth2 Authentication .
Reuse Connection	Enable to reuse the connection.
Connection Timeout(in ms)	Specify the maximum waiting time (in milliseconds) for the connection to be established.
Response Timeout(in ms)	Specify the maximum waiting time (in milliseconds) for a response message.

4.1.2 Processing Tab

The screenshot shows the 'AI' configuration page with the 'Processing' tab active. Under 'PROCESSING DETAILS', the following settings are visible:

- Operation: Orchestration - Completion
- Orchestration Deployment ID: `${header.orch_id}`
- AI Resource Group: default
- Request Payload Source: UI Configurable
- Model: gemini-2.0-flash
- Role: assistant
- Input: "How does AI work? Explain it in simple terms."

The **Processing** tab contains the operational configurations for the AI receiver adapter.

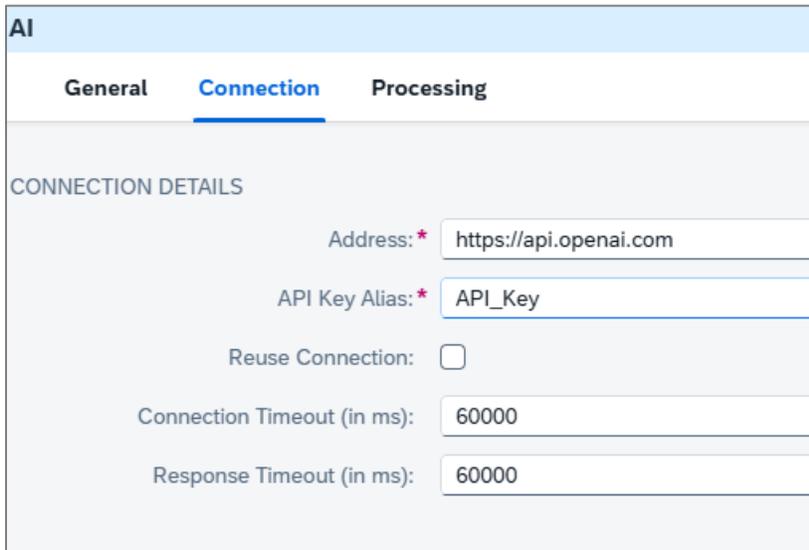
Parameter	Description
Operation	Select the operation from the dropdown.
Orchestration Deployment ID	Specify the Deployment ID for this Orchestration.
AI Resource Group	Specify the AI Resource Group configured for the specific orchestration deployment.

Parameter	Description
Request Payload Source	Select an option to specify the source for request payload: <ul style="list-style-type: none"> • Exchange Body allows you to specify required structure and values. • UI Configurable provides user friendly fields to create the payload automatically.
Model	Select the required AI model for your operation. <div style="background-color: #e6f2ff; padding: 5px; margin-top: 10px;">  To verify and check availability of models, see Availability of Generative AI Models. </div>
Role	Specify the role to be assumed: <ul style="list-style-type: none"> • assistant • system • user
Input	Specify the content containing the instruction to be carried out.
Request Headers	Enter a list of custom headers, separated by a pipe (), to be sent to the target system. Use an asterisk (*) to send all custom headers to the target system. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them.
Response Headers	Enter a list of headers, separated by a pipe (), coming from the target system's response to be received in the message. Use an asterisk (*) to receive all the headers from the target system, which is also the default value. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them.

4.2 Custom-OpenAI-REST

4.2.1 Connection Tab

The **Connection** tab contains connection and authentication parameters for AI Adapter.



The screenshot shows the 'AI' configuration window with the 'Connection' tab selected. The 'CONNECTION DETAILS' section includes the following fields:

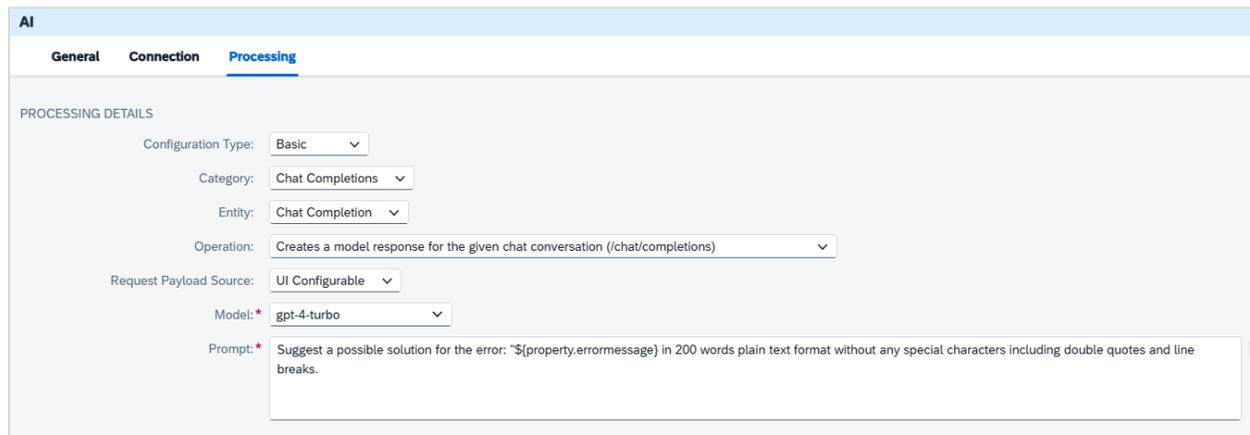
- Address:** *
- API Key Alias:** *
- Reuse Connection:**
- Connection Timeout (in ms):**
- Response Timeout (in ms):**

The connection tab contains the following fields:

Parameter	Description
Address	Specify the OpenAI Address. Example: <code>https://api.openai.com</code>
API Key Alias	Specify the API Key alias. For more information, see Creating Secure Parameter in Security Material . <div style="background-color: #e6f2ff; padding: 5px; border: 1px solid #add8e6;"><p> The value of API Key Alias must be a combination of <code><Bearer ></code> and <code>{API Key provided by OpenAPI}</code>.</p></div> Example: <code>Bearer sk-proj-xxxxxx</code>
Reuse Connection	Enable to reuse the connection.

Parameter	Description
Connection Timeout (in ms)	Specify the maximum waiting time (in milliseconds) for the connection to be established.
Response Timeout (in ms)	Specify the maximum waiting time (in milliseconds) for a response message.

4.2.2 Processing Tab



The screenshot shows the 'AI' configuration page with the 'Processing' tab active. Under 'PROCESSING DETAILS', the following settings are visible:

- Configuration Type: Basic
- Category: Chat Completions
- Entity: Chat Completion
- Operation: Creates a model response for the given chat conversation (/chat/completions)
- Request Payload Source: UI Configurable
- Model: gpt-4-turbo
- Prompt: Suggest a possible solution for the error: "{property.errormessage}" in 200 words plain text format without any special characters including double quotes and line breaks.

The **Processing** tab contains the operational configurations for the AI receiver adapter.

Parameter	Description
Configuration Type	Select the required configuration type: <ul style="list-style-type: none"> • Basic to use the dropdowns and parameter text fields • Advanced to specify the relative URL.
Category	Select the API based on which the API is selected: <ul style="list-style-type: none"> • Chat Completions • Platform • Responses
Entity	Select the entity based on which the operation will be performed.
Operation	Select the desired operation from the dropdown.
File Name	Specify the name of the file for upload.

Parameter	Description
Model	<p>Specify the required AI model for your operation.</p> <p> This field is editable; you can also specify other models if your preferred model is not available in the dropdown.</p>
Request Payload Source	<p>Select an option to specify source for request payload:</p> <ul style="list-style-type: none"> • UI Configurable provides user friendly fields to create the payload automatically. • Exchange Body allows you to specify required structure and values.
Mask Attachment Name	<p>Specify an additional image file whose fully transparent areas indicate where image should be edited.</p> <p> It must be a valid PNG file, less than 4MB, should have the same dimensions as image.</p>
Include	<p>Specify additional information to be included in the transcription response.</p> <p>Example: <code>logprobs</code></p> <p> For multiple values, use comma separated values.</p>
Language	<p>Specify the language of the input audio in ISO-639-1 format.</p> <p>Example: <code>en</code></p>
Input	Specify the text for the input body field.
Voice	Select the voice to be used to generate the audio.
Instructions	Control the voice of your generated audio with additional instructions.
Prompt	Specify the content containing the instruction to be carried out.
Number of Images	Specify the number of images to be generated. The value ranges from 1 to 10.
Response Format	<p>Specify the output format.</p> <p>Example: <code>srt,url</code></p>

Parameter	Description
Temperature	Specify the sampling temperature. This value must be between 0 and 1. Example: 0.8
Timestamp Granularities	Specify comma separated values to timestamp output at the segment, word level, or both.
Speed	Specify the speed of the generated audio.
Size	Select the image size from the dropdown.
User	Specify the unique identifier representing your end-user. Example: user_343211
Purpose	Select a value from the dropdown to indicate the purpose of the uploaded file.
Operation Parameters	Specify the Name and Value in case the resource path includes parameters. Example: Set Name as propertyKey and Value as 76548
HTTP Method	Select the required HTTP method from the available dropdown.
Relative URL	Specify the endpoint path, excluding the Host. Example: /v1/files/file-abc123/content
Query	Specify the query that should be transferred with the HTTP request. Example: param1=value1¶m2=value2
Request Headers	Enter a list of custom headers, separated by a pipe (), to be sent to the target system. Use an asterisk (*) to send all custom headers to the target system. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them.
Response Headers	Enter a list of headers, separated by a pipe (), coming from the target system's response to be received in the message. Use an asterisk (*) to receive all the headers from the target system, which is also the default value. All Camel-specific headers and HTTP protocol headers except "date" are excluded by default even if you specify them.

5 AI Adapter Operations

This section describes some of the operations supported by the AI adapter.

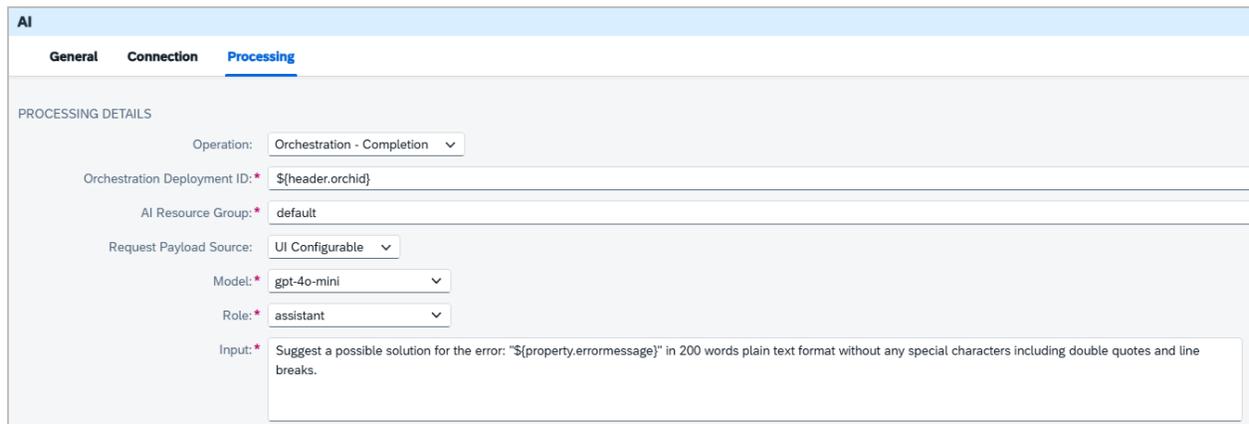
Note: Each operation requires a specific set of permissions depending on the entity and operation.

5.1 AICore-GenAIHub

5.1.1 Using UI Configurable

Selecting the **UI Configurable** option allows you to conveniently create the payload by populating fields in the **Processing** tab.

For this example, after selecting the desired **model**, the **role** is set to `user` and content is specified in the **Input** text field.



The screenshot shows the 'AI' configuration interface with the 'Processing' tab selected. The 'PROCESSING DETAILS' section contains the following fields:

- Operation: Orchestration - Completion (dropdown)
- Orchestration Deployment ID: * \${header.orchid} (text field)
- AI Resource Group: * default (text field)
- Request Payload Source: UI Configurable (dropdown)
- Model: * gpt-4o-mini (dropdown)
- Role: * assistant (dropdown)
- Input: * Suggest a possible solution for the error: "\${property.errorMessage}" in 200 words plain text format without any special characters including double quotes and line breaks. (text area)

Response:

The error `'org. apache. camel.CamelException: No key pair found for Private Key Alias:` suggests an issue with the configuration related to accessing data using the current framework.

5.1.2 Using Exchange Body

AI		
General	Connection	Processing
PROCESSING DETAILS		
Operation:	Orchestration - Completion ▾	
Orchestration Deployment ID: *	\${header.orch_id}	
AI Resource Group: *	default	
Request Payload Source:	Exchange Body ▾	
HEADER DETAILS		
Request Headers:		
Response Headers:	*	

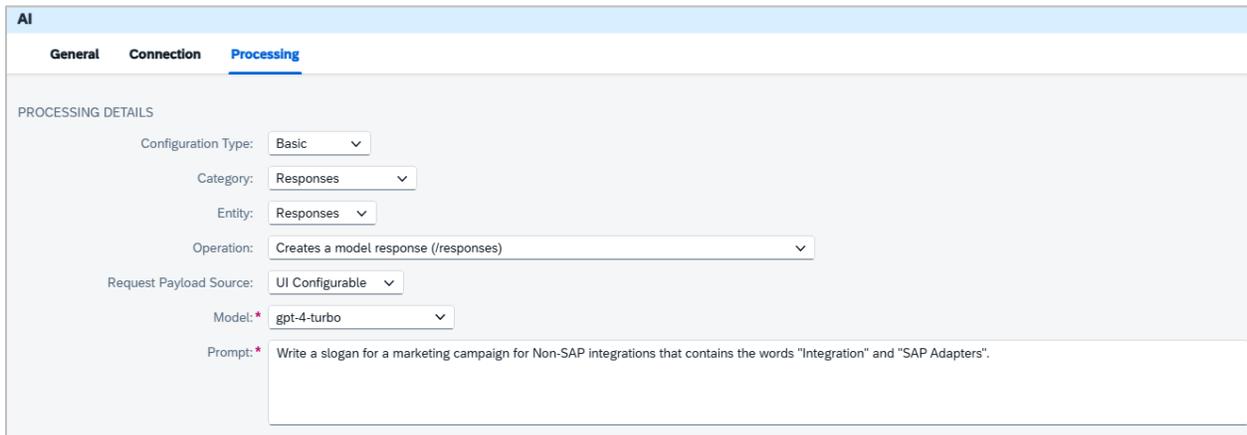
Alternatively, you can specify the request payload using the Exchange Body as shown below:

```
{
  "orchestration_config": {
    "module_configurations": {
      "templating_module_config": {
        "template": [
          {
            "role": "user",
            "content": "How to create an integration flow"
          }
        ]
      },
      "llm_module_config": {
        "model_name": "gpt-4o-mini"
      }
    }
  }
}
```

5.2 Custom-OpenAI-REST

5.2.1 Creates a model response (/responses)

This operation allows you create a response based on input **Prompt** using your preferred **Model**. The response includes text or JSON outputs.



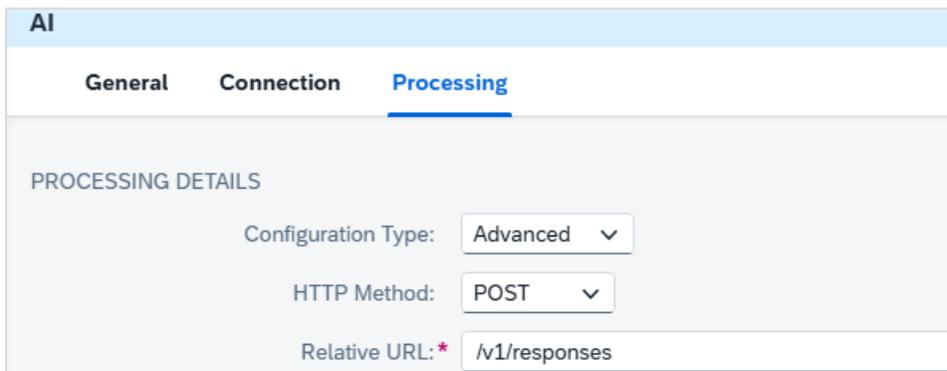
The screenshot shows the 'AI' interface with the 'Processing' tab selected. Under 'PROCESSING DETAILS', the following settings are visible:

- Configuration Type: Basic
- Category: Responses
- Entity: Responses
- Operation: Creates a model response (/responses)
- Request Payload Source: UI Configurable
- Model: gpt-4-turbo
- Prompt: Write a slogan for a marketing campaign for Non-SAP integrations that contains the words "Integration" and "SAP Adapters".

You can perform the same operation using **Advanced** configuration as well. Select HTTP Method as **POST** and specify the Relative URL as `/v1/responses`

Payload:

```
{  
  "model": "gpt-4.1-mini",  
  "input": "Write a slogan for a marketing campaign for Non-SAP Integrations  
that contains Integration and SAP Adapter",  
  "temperature": 0.7,  
  "max_output_tokens": 200  
}
```



The screenshot shows the 'AI' interface with the 'Processing' tab selected. Under 'PROCESSING DETAILS', the following settings are visible:

- Configuration Type: Advanced
- HTTP Method: POST
- Relative URL: /v1/responses

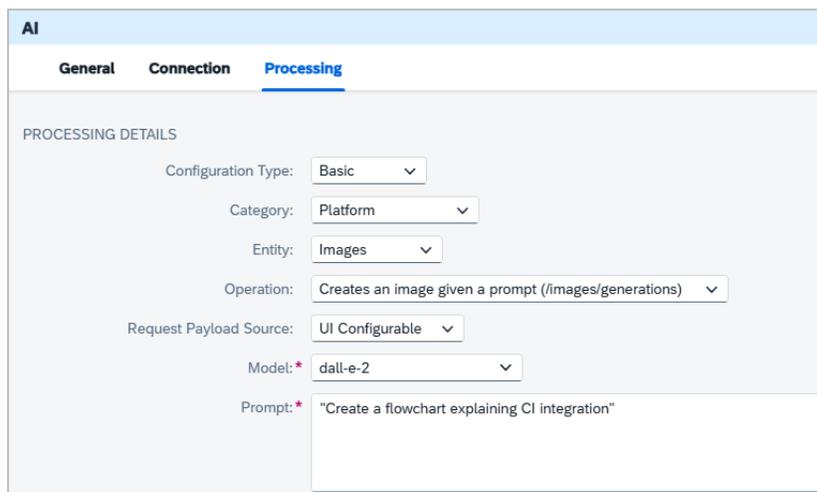
Response: (This is a partial excerpt)

```
"content": [
  {
    "type": "output_text",
    "annotations": [],
    "logprobs": [],
    "text": "Seamless Integration, Powerful SAP Adapter \u20142014
Connecting Your Business Beyond Boundaries!"
  }
]
```

5.2.2 Creates an image given a prompt (/images/generations)

The **Category** specifies the API that you want to interact with. After selecting the required **Entity**, the **Operation** allows you to specify the action to be performed.

Select an available **Model** of your choice and provide an appropriate **Prompt** to get the desired image output.



The screenshot shows the 'AI' configuration interface with the 'Processing' tab selected. Under 'PROCESSING DETAILS', the following settings are visible:

- Configuration Type: Basic
- Category: Platform
- Entity: Images
- Operation: Creates an image given a prompt (/images/generations)
- Request Payload Source: UI Configurable
- Model: dall-e-2
- Prompt: "Create a flowchart explaining CI integration"

You can perform the same operation using **Advanced** configuration as well. Select HTTP Method as **POST** and specify the Relative URL as /v1/images/generations

Payload:

```
{
  "model": "dall-e-2",
  "prompt": "A futuristic SAP data centre glowing with blue neon lights, in a
city, ultra-realistic.",
  "size": "1024x1024",
  "n": 1
}
```

AI

General Connection **Processing**

PROCESSING DETAILS

Configuration Type: ▾

HTTP Method: ▾

Relative URL: *

Response:

```
{  
  "created": 1561140318,  
  "data": [  
    {  
      "url": "<url with a link to the image>"  
    }  
  ]  
}
```