



Informatica® Cloud Application Integration
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Multimodal Chat Completion with Google Vertex AI

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Table of Contents

- Preface 5**

- Chapter 1: Introduction to Multimodal Chat Completion with Google Vertex AI recipe..... 6**
- Multimodal Chat Completion with Google Vertex AI recipe contents. 7
 - Multimodal Chat Completion with Google Vertex AI recipe assets. 7

- Chapter 2: Using the Multimodal Chat Completion with Google Vertex AI recipe..... 8**
- Step 1. Copy and access the recipe. 8
- Step 2. Configure and publish the Google Vertex AI connection. 9
- Step 3. Configure and publish the process. 9
- Step 4. Publish and run the guide. 10

Preface

Use *Multimodal Chat Completion with Google Vertex AI* to learn how to ask questions to the Google Vertex Large Language Model (LLM) based on the context from different file types. This guide assumes that you have an understanding of the Google Vertex AI Connector concepts.

CHAPTER 1

Introduction to Multimodal Chat Completion with Google Vertex AI recipe

The Multimodal Chat Completion with Google Vertex AI recipe is based on REST and SOAP APIs. You can ask questions to the Google Vertex AI Large Language Model (LLM) based on the contexts from uploaded files or specified the file URL.

The recipe allows you to upload files or provide a publicly accessible URL with context, provide a user prompt, read the file contexts, and answer the user's questions based on the file contexts with the Google Vertex AI LLM.

You can upload files of the following formats:

- application/pdf
- audio/mpeg
- audio/mp3
- audio/wav
- image/png
- image/jpeg
- image/webp
- text/plain
- video/mov
- video/mpeg
- video/mp4
- video/mpg
- video/avi
- video/wmv
- video/mpegps
- video/flv

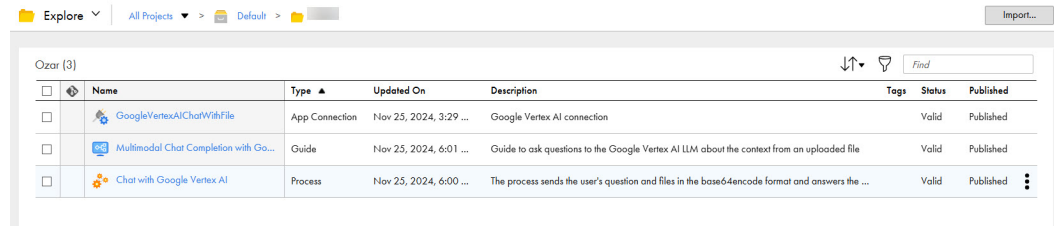
You can upload up to 10 files with a combined maximum total size of 5 MB.

When you specify a file URL, you must also specify the IANA MIME type, that is, the Internet Assigned Numbers Authority (IANA) Multipurpose Internet Mail Extensions (MIME) type of data.

Multimodal Chat Completion with Google Vertex AI recipe contents

The Multimodal Chat Completion with Google Vertex AI recipe contains an app connection, a guide, and a process.

The following image shows the assets that the Multimodal Chat Completion with Google Vertex AI recipe package contains:



Multimodal Chat Completion with Google Vertex AI recipe assets

The following table lists the assets that the Multimodal Chat Completion with Google Vertex AI recipe package contains:

Asset Name	Asset Type	Description
GoogleVertexAIChatWithFile	App connection	Google Vertex AI connection.
Chat with Google Vertex AI	Process	Process that sends the user's question and files in the base64encode format and answers the question based on the file contexts using the Google Vertex AI LLM.
Multimodal Chat Completion with Google Vertex AI	Guide	Guide that allows users to ask questions to the Google Vertex AI LLM about the context from the uploaded files.

CHAPTER 2

Using the Multimodal Chat Completion with Google Vertex AI recipe

To use the Multimodal Chat Completion with Google Vertex AI recipe, you must perform the following steps manually:

1. Copy and access the recipe.
2. Configure and publish the Google Vertex AI connection.
3. Configure and publish the process.
4. Publish and run the guide.

Step 1. Copy and access the recipe

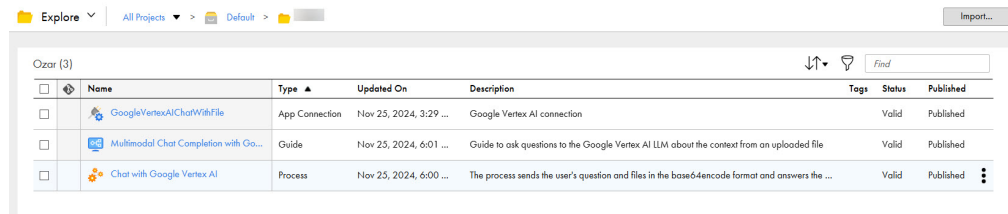
Copy the pre-configured assets in the recipe to a separate project or folder.

1. Open the **Multimodal Chat Completion with Google Vertex AI** recipe and click **Use**.
2. Select the location where you want to copy the recipe, and then click **Continue**.
3. In the **Copying the recipe** dialog box, click **OK**.

It might take some time for the recipe to get copied. You will receive a notification when the recipe is ready for use.

4. After the recipe is copied, click **Explore** to access the recipe content.
5. Navigate to the project or folder where you copied the recipe or enter the recipe name in the **Find** box.

All the assets in the recipe are displayed as shown in the following image:



Step 2. Configure and publish the Google Vertex AI connection

Configure the project ID, private key ID, private key, client email, and location to connect to Google Vertex AI, and then publish the GoogleVertexAIChatWithFile connection.

1. Open the **GoogleVertexAIChatWithFile** connection.
2. In the **Connection Properties** section, enter values for the following properties:

Property	Description
Project_ID	The project ID to generate a valid access token.
Location	The region to process the request.
Private_Key_ID	The private key ID associated with the Google Vertex AI service account.
Client_Email	The email address associated with the Google Vertex AI service account.
Private_Key	The Google Vertex AI private key associated with the service account. Enter the PKCS1 certificate as a Base64-encoded string in the following format: -----BEGIN PRIVATE KEY----- n-----END PRIVATE KEY-----

3. Save and publish the connection.

Step 3. Configure and publish the process

Configure the Google Vertex AI LLM model version and grounding to connect the model output to verifiable sources of information and publish the process.

1. Open the **Chat with Google Vertex AI** process.
2. Optionally, on the **Assignments** tab of the **Set Flow Configuration** step, enter values for the following fields:
 - In the **Model_LLM** field, enter the model ID of the LLM model. The default ID is `gemini-1.5-flash-002`.
 - Clear the check box corresponding to the **Grounding** field. It is enabled by default. Grounding is the ability to connect the model output to verifiable sources of information.
 - In the **Generation_Config** field, enter the prompt instructions using the Expression Editor, as shown in the following sample code:

```
<generationConfig>  
  <maxOutputTokens>8192</maxOutputTokens>  
  <temperature>1</temperature>  
  <topP>0.95</topP>  
</generationConfig>
```

For the **Generation_Config** field, enter values for the following properties:

Property	Description
temperature	Controls the randomness of the model's output. A lower value close to 0 makes the output more deterministic, while a higher value close to 1 increases randomness and creativity. For example, if <code>temperature</code> is set to 0.5, the model balances between deterministic and creative outputs.
topP	Determines the cumulative probability threshold for token selection. The model considers the smallest set of tokens whose cumulative probability meets or exceeds <code>topP</code> . For example, if <code>topP</code> is set to 0.1, the model considers only the top 10% most probable tokens at each step.
maxOutputTokens	Defines the maximum number of tokens that the model can generate in its response. The value can't exceed the model's context length. Most of the models have a context length of 2048 tokens.

3. Save and publish the process.

Step 4. Publish and run the guide

You can ask questions to the Google Vertex AI Large Language Model (LLM) about the contexts from uploaded files or the file URL.

1. Open the **Multimodal Chat Completion with Google Vertex AI** guide.
2. On the **Start** tab of the Start step, ensure that the **Run As** field is set to **Current User**.
3. Save and publish the guide.
4. On the **Actions** menu, click **Run**. Alternatively, you can copy the execution URL from the **Properties Details** dialog box to run the guide.
5. On the **Instructions** page, in the **Specify the upload type** field, select one of the following options:
 - Select **Attach files** to upload files from your local machine.
 - Select **File URL** to enter a publicly accessible URL.
6. In the **Enter your query below** field, enter a question based on the context.
7. Click **Continue**.
8. Based on the upload type you selected on the previous page, perform one of the following steps:
 - For **Attach files**, upload files. You can add up to 10 files with a combined maximum total size of 5 MB.
 - For **File URL**, enter the URL and the MIME type of the file.
9. Click **Continue**.
You will receive a response from the LLM.
10. To ask the next question, click **Next Question**.
11. Enter new questions with the same context and click **Continue**.

You can also use the embed code to embed the guide into an HTML document of a third-party application.