



Integrating Applications with Gemini 1.0 Pro on Google Cloud



Learn how to use the Vertex AI Gemini API to interact with the generative AI models to process text, images, and video.

Click the first lesson—or the **Start Course** button—to begin.



What's in it for me?



Vertex AI overview



Gemini models



What did I walk away with?

What's in it for me?

A short course that teaches you how to use the Vertex AI Gemini API to interact with the generative AI models to process text, images, and video.



- ✓ Discover the Gemini API and its generative AI models.
- ✓ Access the Gemini 1.0 Pro and Gemini 1.0 Pro Vision models from code.
- ✓ Test the capabilities of the models with text, image, and video prompts from an app.

Vertex AI overview

What is Vertex AI?



A [machine learning \(ML\) platform](#) to train and deploy ML models and AI applications. With Vertex AI, you can use and customize large language models (LLMs) in your AI-powered applications.

Vertex AI combines data engineering, data science, and ML engineering workflows, enabling your teams to collaborate using a common toolset, and scale your applications on Google Cloud.

Develop ML workflows using the Python SDK



SDK toolkit

Python SDK

A Vertex AI SDK for Python is available to develop ML workflows.

To learn more about Vertex AI, view the [documentation](#).

Generative AI on Vertex AI

Generative AI on Vertex AI (also known as GenAI) gives you access to Google's large generative AI models so you can test, tune, and deploy them for use in your AI-powered applications.

GenAI on Vertex AI provides these capabilities:

To learn more, click the item to expand it.

API access

You can access the GenAI models using APIs.

Foundation models

Vertex AI has various genAI foundation models, including:

- Gemini API
- PaLM API
- Codey APIs
- Imagen API
- MedLM

Customization

You can customize the default behavior of Google's foundation models so that they consistently generate the desired results without using complex prompts.

This customization process is called model tuning. Model tuning helps you reduce the cost and latency of your requests by allowing you to simplify your prompts.

For more information on using genAI models on Vertex AI, view the [documentation](#).

GenAI foundation models

Vertex AI has various genAI foundation models that are accessible through an API, including:

Foundation model	Usage
Gemini API	For advanced reasoning, multiturn chat, code

Foundation model	Usage
	generation, and multimodal prompts.
PaLM API	For natural language tasks, text embeddings, and multiturn chat.
Codey APIs	For code generation, code completion, and code chat.
Imagen API	For image generation, image editing, and visual captioning.
MedLM	For summarizing and answering medical questions.

CONTINUE

What is the Vertex AI Gemini API?



Gemini

Publisher endpoint

Each of the genAI foundation models in Vertex AI is exposed through a publisher endpoint that's specific to your Google Cloud project.

There's no need to deploy the foundation model unless you need to tune it for a specific use case.

Vertex AI Gemini API

The Vertex AI Gemini API:

- Contains the publisher endpoints for the Gemini family of models.
- Provides access to the Gemini models.
- Enables you to process information from multiple modalities, such as text, images, and video.

Gemini models

Gemini is a family of generative AI models that is designed for multimodal use cases.

The Gemini API gives you access to the Gemini models.

Click each card to learn more.

Gemini 1.0 Pro

Designed for natural language tasks, text and code chat, and code generation.

Excels in creative writing by producing different creative text formats, like poems, letters, scripts, etc., and simplifying complex text by generating summaries of key points.

Gemini 1.0 Pro Vision

Supports multimodal prompts, including text, images, and video.

Excels at tasks like visual question answering, image captioning, and information extraction from visual content.

Benefits of using the Gemini API

The Gemini API is quite powerful, so let's explore some of the benefits of using the API.

To learn more, click each item to expand it.

Accessibility to powerful generative AI models —

Gemini 1.0 Pro and Gemini 1.0 Pro Vision offer advanced capabilities for text generation, code generation, and multimodal understanding.

Flexibility —

Process information from a variety of modalities in a single request.

Scalability —

Design large-scale deployments with features like enterprise security, data residency, and performance.

Ease of use —

Get started quickly with Python, Node.js, Java, and Go SDKs.

Sample uses of the Gemini API



GenAI

-
- Generate code from natural language descriptions.
 - Create image captions that go beyond simple descriptions.
 - Answer questions about the content of images and videos.
 - Generate different creative text formats, like poems, code, scripts, musical pieces, email, letters, and stories.

Getting started

- 1 Set up your Google Cloud account.
- 2 Enable the Vertex AI API.
- 3 Choose the appropriate SDK for your programming language, and develop your app.
- 4 Send multimodal prompts to the models using the SDK.
- 5 Interpret the model's response.

What did I walk away with?

The Vertex AI Gemini API is a powerful tool for developers and enterprises who want to leverage the capabilities of multimodal machine learning.

With its ability to process information from multiple modalities, Gemini opens up a wide range of new possibilities for creative applications.

Here is a quick recap.



- ✓ Vertex AI is a machine learning (ML) platform to train and deploy ML models.
- ✓ The Vertex AI Gemini API contains the publisher endpoints for the Gemini family of models.
- ✓ Gemini API can be used for a vast number of usecases including generating code from natural language, creating image captions, answering questions about the content of images and a lot more.

Congratulations on completing this training!

