Imagen Product Recontext User Guide [EXTERNAL]

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Key Takeaways

- Product Recontext is based on the Imagen model developed by Google.
- Product Recontext is available for allowlisted customers while in the Preview stage.
- Generate images of products in new scenes
- Access via cURL commands or the Vertex Python SDK

Overview

Product Recontext is a Preview (private) offering of a cutting edge image editing service based on Google's foundational Imagen model. Using the Product Recontext API, application developers and retailers can generate high quality images of a wide variety of products "recontextualized" in new scenes and backgrounds.

Supported product categories

- Appliances
- Business and industrial
- Clothing
- Electronics
- Furniture
- Garden and yard
- Hardware
- Health and beauty
- Jewelry
- Pets
- Shoes

- Sporting goods
- Toys and games
- Vehicle

Model card

The Product Recontext model card outlines model details and provides helpful links, such as the intended use, data overview, and interface information. Click the following link to go to the model card in Vertex AI Model Garden.

- Imagen Product Recontext on Vertex AI Model Garden

Get started

To get started with Product Recontext, choose one to three images of a single product and prepare a text description of the scene you want to generate.

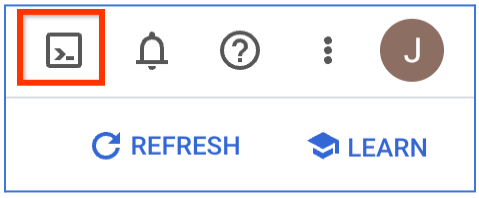
Use Vertex AI Python SDK with Google Colab

You can also follow the official Vertex AI Colab notebook tutorial to find examples and instructions for using the Vertex AI SDK with Product Recontext.

cURL commands in a Cloud Shell

You can access the Cloud Shell by performing the following steps:

1. Go to the Google Cloud Console.
2. Click the Activate Cloud Shell icon at the top right.



3. Add a project ID from Cloud Console.
    a. When you first create a project, you can accept the default generated project ID or create your own. A project ID cannot be changed after the project is created, so if you are creating a new project, be sure to choose an ID that you'll be comfortable using for the lifetime of the project and avoid storing sensitive information in resource identifiers.

Available regions

The `imagen-product-recontext-preview-06-30` model endpoint can be used in the following regions:

- us-central1

Request fields

Reference the fields below when forming the request to the Vertex AI endpoint.

Instance	Description	Acceptable values
prompt	The input prompt to guide the image generation. By default, this prompt is rewritten internally for quality. You can disable the rewriting by setting the **enhancePrompt** parameter. This field is optional but strongly recommended.	Text describing the scene to generate with the product.
productImages	One to three images of the product. If providing multiple images, they should be of the same product.	• **bytesBase64Encoded**: Base 64 encoded byte string. • **gcsUri**: gs:// path to an image file in Cloud Storage. The image mime type must be one of: PNG, JPEG, or WEBP
productDescription	An optional short text description of the product to generate.	Text description of the product. “Red pair of shoes”, “A leather jacket”, etc. Empty by default.

Parameter	Description	Acceptable values
enhancePrompt	Whether or not to enhance the rewrite the input prompt. Not valid if no prompt is set in the request.	Boolean values. Default is True.
baseSteps	This field controls the image generation. Higher steps trade off quality with latency.	Integer values greater than 0. The default is 32.
sampleCount	The number of images to generate in a single request.	• Integer values between 1 and 4 • Default value is 1
seed	Optional. The random seed for image generation. This isn't available when addWatermark is set to true.	Integer values
safetySetting	Optional. Adds a filter level to safety filtering	• **block_low_and_above**: Strongest filtering level, most strict blocking. .

Parameter	Description	Acceptable values
		• **block_medium_and_above**: Block some problematic prompts and responses. • **block_only_high**: Reduces the number of requests blocked due to safety filters. May increase objectionable content generated by Imagen. • **block_none**: Block very few problematic prompts and responses. Access to this feature is restricted. The default value is **block_medium_and_above**.
personGeneration	Optional. Whether to allow generation of people by the model.	• **dont_allow**: Disallow the inclusion of people or faces in images. • **allow_adult**: Allow generation of adults only. • **allow_all**: Allow generation of people of all ages. The default is **allow_adult**.
addWatermark	Whether to add an invisible watermark to the generated images	Boolean values. The default is **true**.
storageUri	The Cloud Storage URI to store the generated images.	GCS URI strings in the format `gs://...`
outputOptions.mimeType	The image format that the output should be saved as	• "image/png": Save as a PNG image • "image/jpeg": Save as a JPEG image The default value is "image/png".
outputOptions.compressionQuality	The level of compression if the output type is "image/jpeg".	Optional: int Accepted values are 0 through 100. The default value is 75.

Use cases

Recontextualize products

Sample product image (left) and generated result (right) with the prompt "A pair of orange sneakers worn by a trendy, well dressed woman sitting on marble steps".

You can generate a listing image by providing a model and the clothing product. The product will be applied onto the person. Existing clothing items within the same category of the new product will be removed. For example, if the person is wearing a red shirt, and the input product image is a blue shirt, the red shirt will be removed. Generally, the pose, non-swapped clothing, and other features of the person will be preserved.

Request

Acceptable image file formats are **PNG**, **WEBP**, and **JPEG**.

1. Provide a person input image in the request
    a. Set either the **bytesBase64Encoded** field or the **gcsUri** field in the **personImage** instance..
    b. Set the image file format in the **mimeType** field. By default the value is **image/png**.
2. Provide a product input image in the request
    a. Set either the **bytesBase64Encoded** field or the **gcsUri** field in the **productImages** instance.
    b. Set the image file format in the **mimeType** field. By default the value is **image/png**.

Note: only one product image is currently supported.

cURL example

```
PROMPT=<detailed text description of the scene to generate>
PRODUCT_DESCRIPTION=<short text description of the product>
GCS_FILE=<your gs:// path to an image file in Cloud Storage>
PROJECT=<your project id or project number>
REGION=<desired location, e.g. us-central1>

curl -X POST -H "Authorization: Bearer $(gcloud auth print-access-token)"
-H "Content-Type: application/json"
https://${REGION}-aiplatform.googleapis.com/v1/projects/${PROJECT}/location
s/${REGION}/publishers/google/models/imagen-product-recontext-preview-06-30
:predict -d '{
  "instances": [{
     "prompt": "'${PROMPT}'",
     "productImages":[
        {
           "image": {
              "gcsUri": "'${GCS_FILE}'"
           }
          "productConfig": {
             "productDescription": "'${PRODUCT_DESCRIPTION}'",
          }
        }
     ]
  }],
  "parameters": {
     "sampleCount": 2
   }
}'
```

Response

The response will contain one or more generated images depending on the sampleCount specified in the request parameters.

cURL

```
{
  "predictions": [
```

```
    {
      "mimeType": "image/png",
      "bytesBase64Encoded": <generated image as encoded byte string>,
    },
    {
      "mimeType": "image/png",
      "bytesBase64Encoded": <generated image as encoded byte string>,
    }
  ]
}
```