FastAPI Image Generation API Documentation

**Overview**

This API provides functionality to generate images using a Stable Diffusion model based on user-provided text prompts. The server is built using FastAPI and exposes a single endpoint for image generation.

Base URL

```

http://<your-ngrok-url>

```

Replace `<your-ngrok-url>` with the URL generated by ngrok when you run the server.

**API Endpoints**

**1. Health Check**

`GET /`

Description:

Returns a welcome message to verify that the server is running.

Response:

- Status Code: 200 OK

- Content:

{

"message": "Welcome to the Stable Diffusion FastAPI server!"

}

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**2. Generate Image**

`POST /generate`

Description:

Generates an image based on the provided prompt and optional guidance scale.

Request Body:

- Content-Type: `application/json`

- Parameters:

| **Parameter** | **Type** | **Description** | **Required** |
| --- | --- | --- | --- |
| prompt | string | The textual description for the image to be generated. | Yes |
| guidance\_scale | float | A scaling factor that influences the image generation. | No |

Example Request Body:

{

"prompt": "A futuristic city at sunset",

"guidance\_scale": 7.5

}

Response:

- Success:

- Status Code: 200 OK

- Content:

{

"message": "Image generated successfully!",

"image\_path": "generated\_image.png"

}

- Error:

- Status Code: 500 Internal Server Error

- Content:

{

"error": "Error message describing the issue."

}

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**Usage Example with Postman**

1. Create a New Request:

- Open Postman and create a new request.

2. Set the Request Type:

- Change the request type to POST.

3. Enter the Request URL:

- Use the following format:

http://<your-ngrok-url>/generate

4. Set the Body:

- Select the Body tab.

- Choose raw and set the format to JSON.

- Enter the JSON payload:

{

"prompt": "A futuristic city at sunset",

"guidance\_scale": 7.5

}

5. Send the Request:

- Click the Send button to make the request.

6. Check the Response:

- You will receive a response indicating whether the image was generated successfully or if there was an error.

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**Important Notes**

- Ensure the ngrok tunnel is active to access the API.

- The generated image will be saved as `generated\_image.png` in the Colab environment.

- Modify the `prompt` and `guidance\_scale` parameters in the request body to customize image generation.

**Troubleshooting**

- If you encounter issues, check the Colab notebook logs for error messages.

- Ensure that the ngrok authentication token is correctly configured.

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