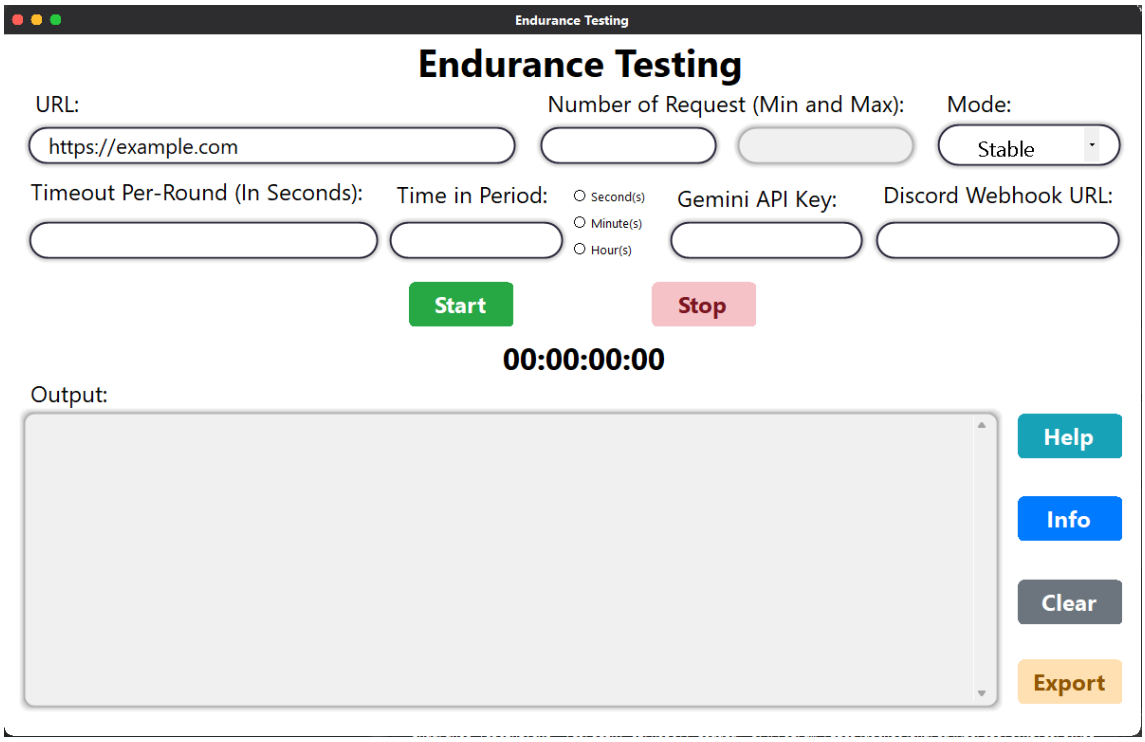
USER GUIDE

Endurance testing, also known as soak testing, involves subjecting an application to a sustained load for an extended period. This methodology helps uncover memory leaks, resource depletion, and other performance degradation issues that might only surface after prolonged usage.

The Endurance Testing Software is a tool for evaluating the performance and stability of web applications through continuous load testing. It enables users to send multiple HTTP requests simultaneously to a specified URL while monitoring various performance metrics such as load time, wait time, response time, throughput, and error rate.

A. System

Here is the User Guide for the Endurance Testing Software. Before using this tool, ensure that your internet connection is stable to maintain smooth testing performance.



1. Enter the target URL to be tested in the field labeled **"URL"**, ensuring that the format is correct by using either the http:// or https:// protocol.

2. Specify the minimum number of requests to be sent in each testing round using the **"Number of Requests (Min and Max)"** field, with a maximum limit of 1,000 requests. If selecting the Progressive or Fluctuative mode, also define the maximum number of requests per round (which must be greater than the minimum request value).
3. Select the testing mode from the **"Mode"** dropdown menu:
   - Stable: Sends a fixed number of requests in each testing round.
   - Progressive: Gradually increases the number of requests over time.
   - Fluctuative: Sends a varying number of requests randomly within the specified minimum and maximum range.
4. Set the timeout threshold for each testing round in the **"Timeout Per-Round (In Seconds)"** field.
5. Specify the testing duration in the **"Time in Period"** field, then select the appropriate time unit (seconds, minutes, or hours).
6. (Optional) Enter the Gemini API Key in the **"Gemini API Key"** field to enable the AI-powered feature for generating a descriptive summary of the test results.
7. (Optional) Enter the Discord Webhook URL in the **"Discord Webhook URL"** field to receive notifications on your Discord server automatically after the test is completed.
8. Click the **"Start"** button to begin the test.
9. Click the **"Stop"** button if you want to halt the test before the countdown timer reaches zero.
10. Monitor the test results in the **"Output"** textbox.
    - The textbox displays only the results from the latest testing round.
    - To view the complete data, export the test results or open the EnduranceTestLog.txt file located in the same directory as the software executable.
11. After the test is completed, the software will display a summary of the test results, including:
    - Total Requests: The total number of requests sent during the test.
    - Successful Requests: The number of requests that received an HTTP 200 (OK) response.
    - Failed Requests: The number of requests that did not receive an HTTP 200 (OK) response or timed out.

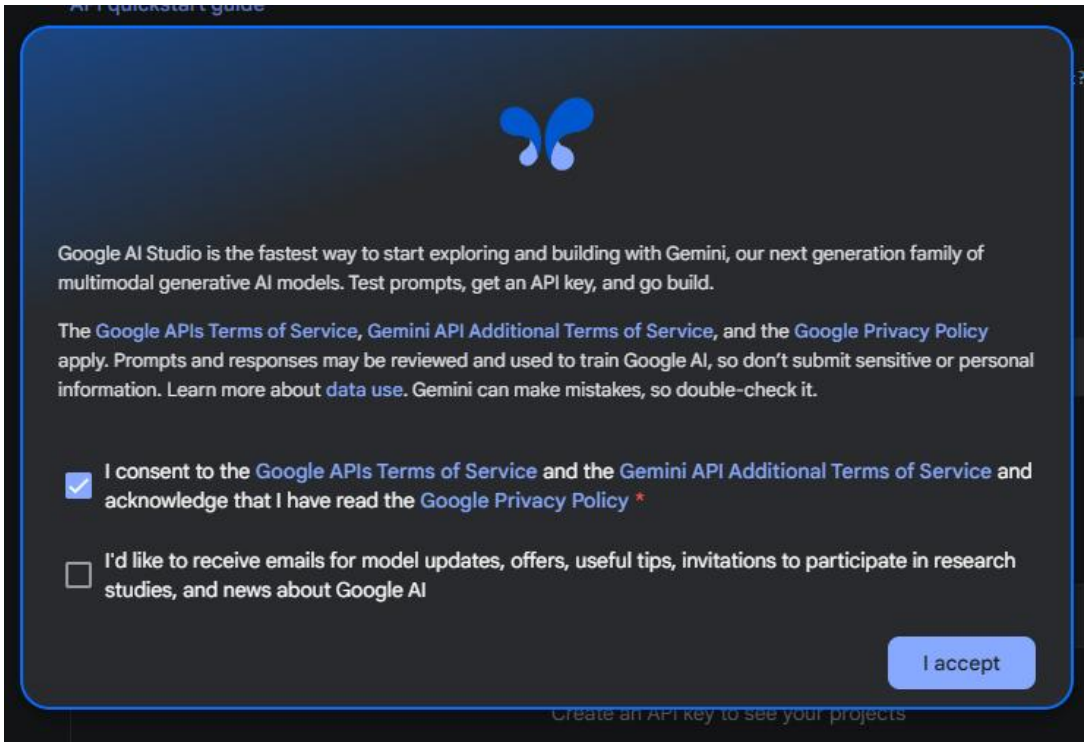
- Average Computer's CPU Usage: The average CPU usage of the computer during the test.
- Average Computer's RAM Usage: The average RAM usage of the computer in megabytes during the test.
- Average Load Time: The average time required to fully receive a request.
- Average Wait Time: The average time until the first byte is received after sending a request.
- Average Response Time: The average response time for all requests.
- Average Throughput: The average number of requests processed per second.
- Average Error Rate: The percentage of requests that failed or timed out.
- Average Round Duration: The average time to complete one testing round.
- AI Analysis: If the Gemini API Key is provided, a descriptive summary of the test results will be displayed.

12. Click the **"Clear"** button to reset the test parameters and erase the test results.
13. Click the **"Export"** button to save the test results in the following formats:
    - Excel (.xlsx)
    - CSV (.csv)
    - JSON (.json)
    - HTML (.html)
    - Discord (summary of test results only)

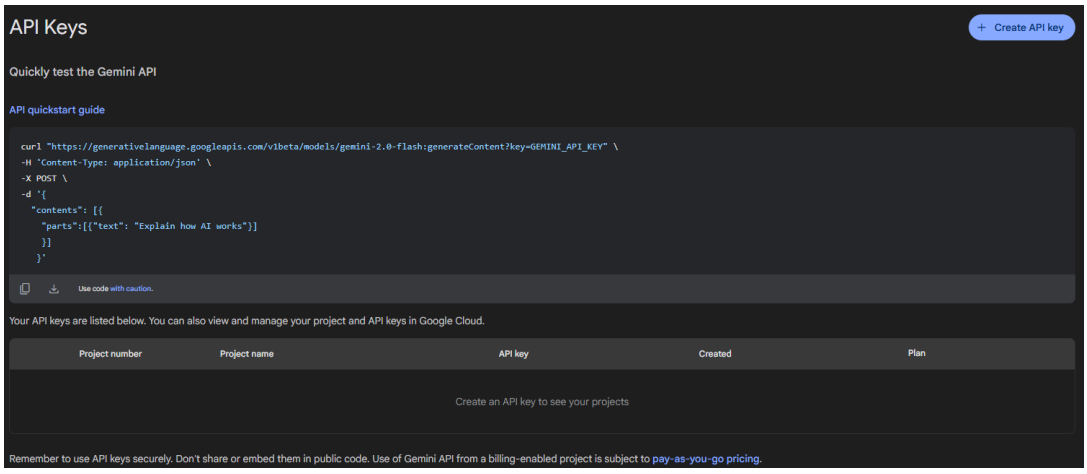
B. Gemini API Key

Here is the guide to obtaining a Gemini API Key:

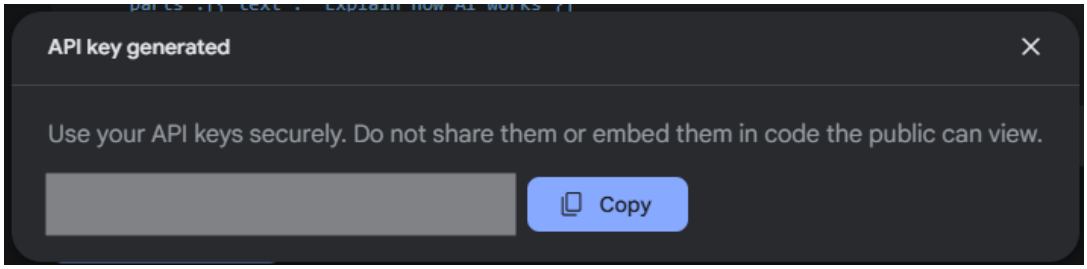
1. First, create a Google account if you do not already have one. Then, visit https://aistudio.google.com/u/3/apikey, check the option **"I consent to the Google APIs Terms of Service and the Gemini API Additional Terms of Service and acknowledge that I have read the Google Privacy Policy *"** and click the **"I accept"** button.



2. Click the **"Create API key"** button and wait for the loading process to complete.



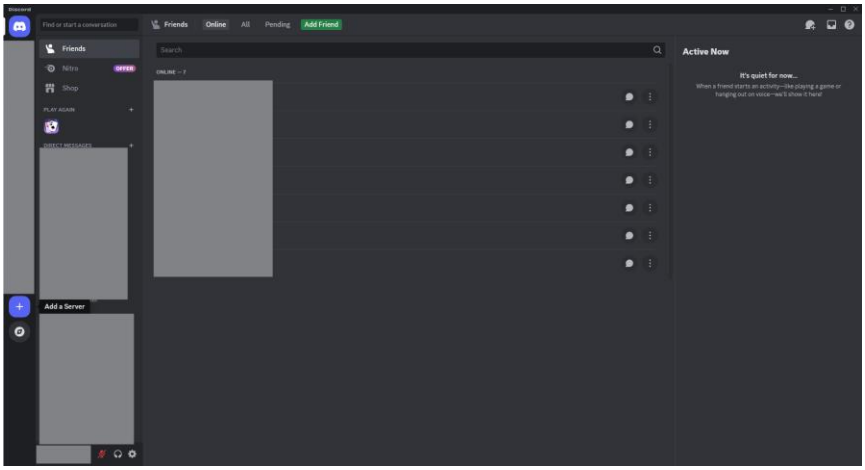
3. The API key is now ready to be copied and used.



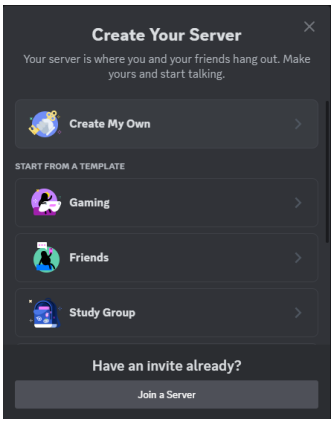
C. Discord Webhook URL

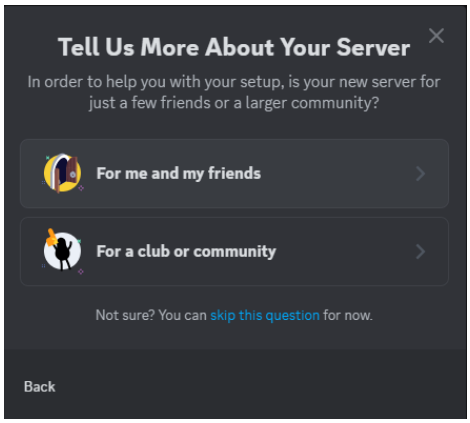
Here is the guide to obtaining a Discord Webhook URL:

1. Create a new server by clicking the **"Add a Server"** icon on the left side of the screen (you may skip this step if you already have a server).

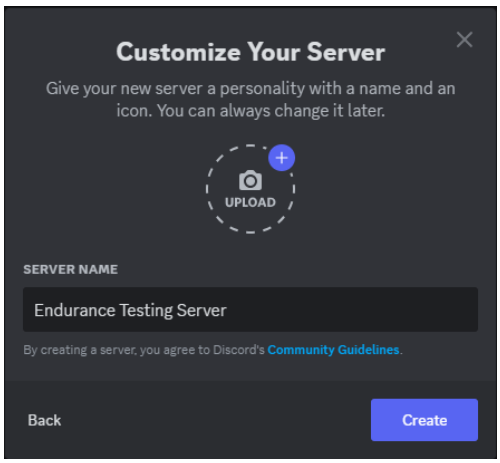


2. Select **"Create My Own"**, then choose **"For me and my friends"** or customize it according to your needs.

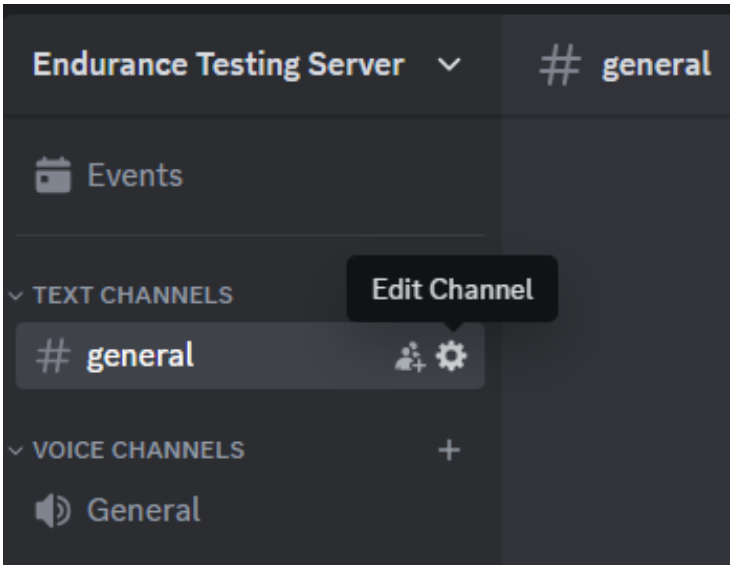




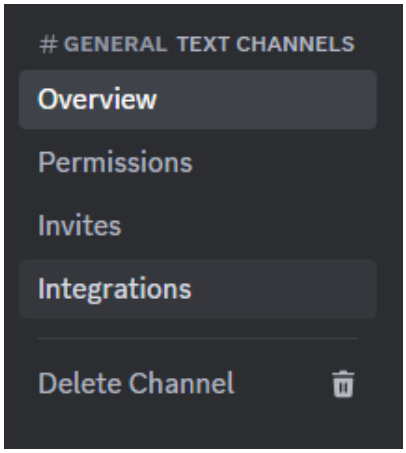
3. Enter a name for your server and click **"Create"**.



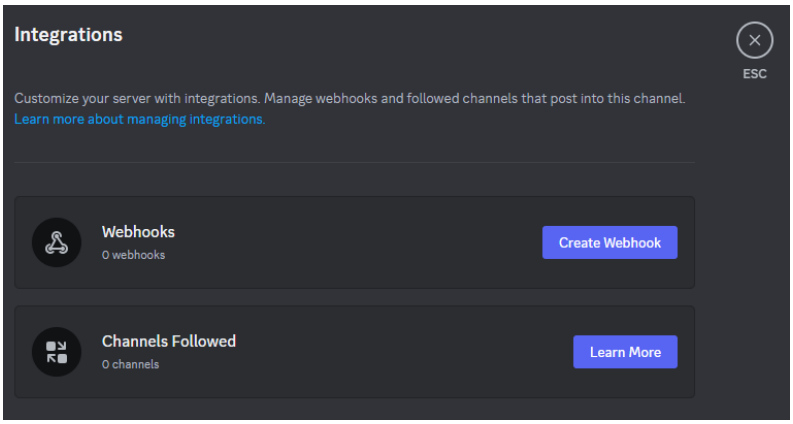
4. Click the gear icon on the left side of the server.



5. Select the **"Integrations"** tab.



6. Click **"Create Webhook"**.



7. The Webhook URL is now ready to be copied and used.