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**Project Tittle: Web Page Performance Testing with
JMeter**

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1 Abstract

JMeter, a versatile performance testing tool, enables the evaluation of software performance across various platforms, including web applications, web services, shell scripts, and databases. Being Java-based, JMeter is compatible with a wide range of systems. It supports both load testing, which simulates expected usage by concurrent users, and stress testing, which determines the maximum load capacity of a webserver.

2 Working Procedure

The steps listed below can be used to test the performance of web pages using JMeter:

2.1 Install and Launch JMeter

Download and install JMeter from the Apache JMeter website (<https://jmeter.apache.org/downloadjmet>)

Apache JMeter 5.5 (Requires Java 8+)

Binaries

[apache-jmeter-5.5.tgz sha512 pgp](#)
[apache-jmeter-5.5.zip sha512 pgp](#)

Figure 1: Download

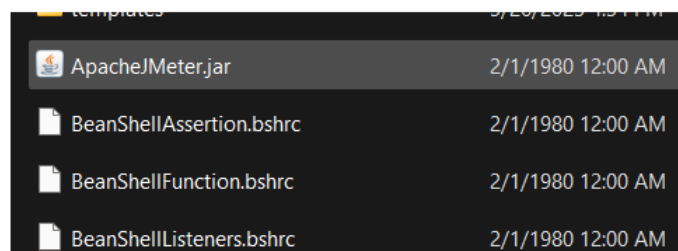


Figure 2: Launch

2.2 Create a Test Plan:

A test plan in JMeter specifies the general format of your performance test. To add a Thread Group to your test plan, right-click on the "Test Plan" element in the tree view on the left and choose "Add" "Threads (Users)" "Thread Group".

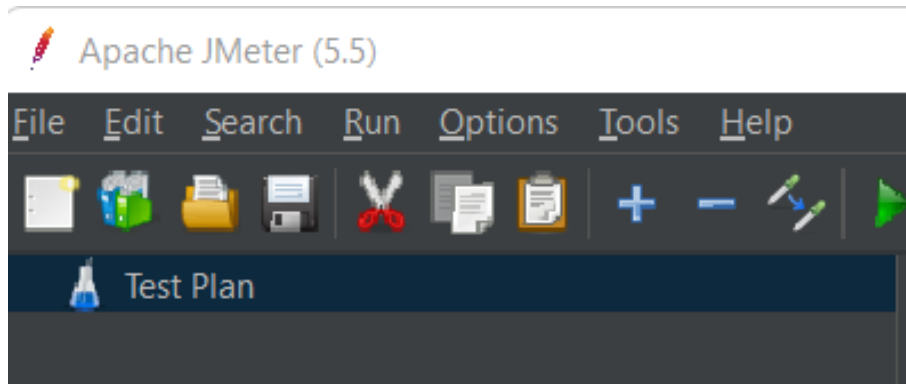


Figure 3: test paln

2.3 Configure Thread Group:

Set the ramp-up period, the number of iterations or loop counts, and the number of threads (concurrent users) you want to emulate when configuring the thread group.

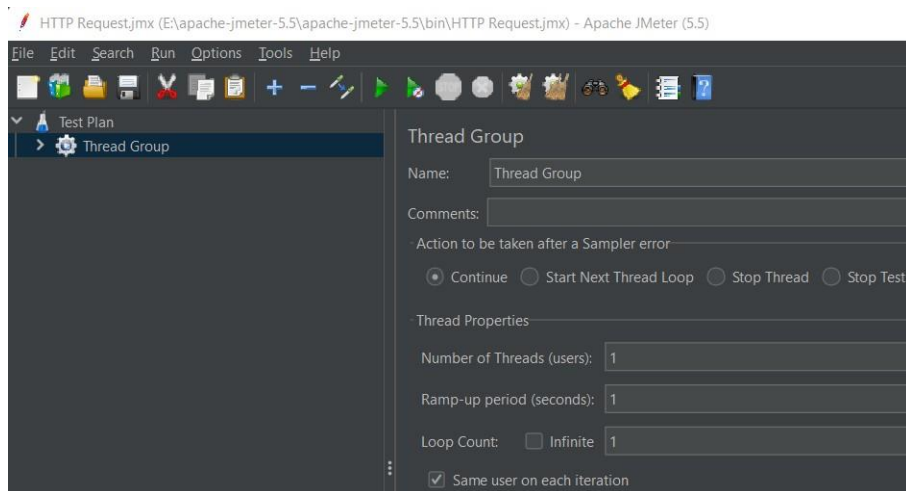


Figure 4: Configure thread

2.4 Add HTTP Request:

To add an HTTP request sampler, right-click on the Thread Group and choose "Add" - "Sampler" - "HTTP Request". Enter the URL of the website you wish to test in the sampler's configuration.

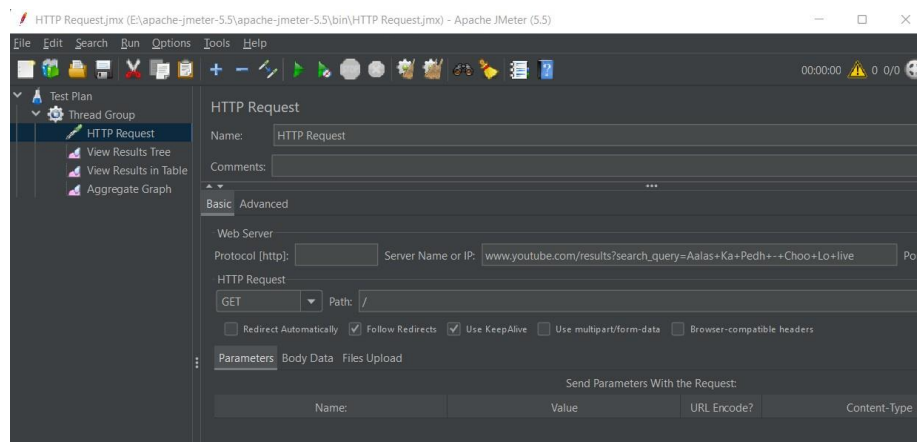


Figure 5: add http request url

2.5 Add Listeners:

JMeter uses listeners to record and report the outcomes of your performance test. To add a listener, right-click on the Thread Group and choose "Add" - "Listener". "View Results Tree", "Listener", "View Results in Table" and "Aggregate Graph." are some frequently used listeners.

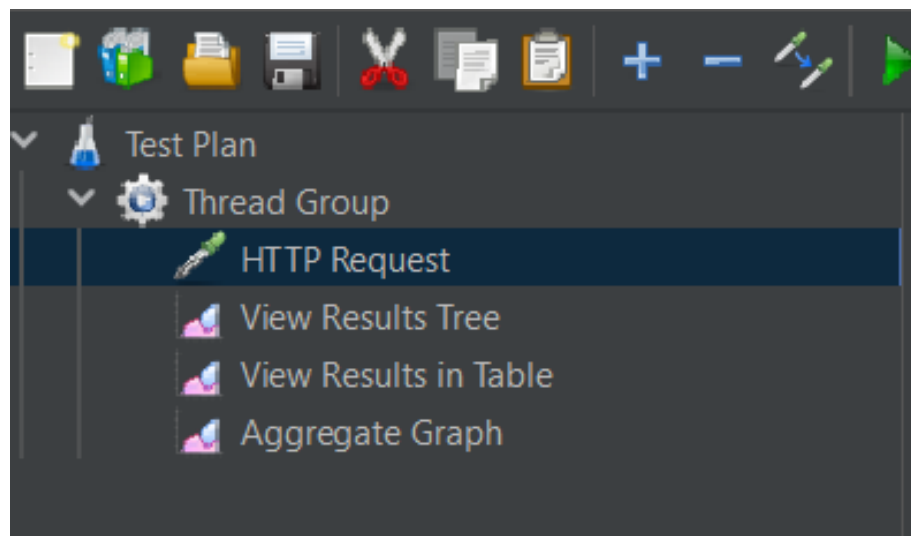


Figure 6: Add listeners

2.6 Configure Test Duration and Run the Test

Add a "Thread Group" - "Scheduler" element to your test plan to specify the test's duration. Set the required test duration in the scheduler's configuration. To start your performance test, click the "Play" button in the toolbar or choose "Run" - "Start" from the menu.

2.7 Analyze Results:

Using the listeners you added, you can assess the outcomes when the test run is finished. Metrics like as response times, throughput, failures, etc. will be displayed by the listeners.

2.7.1 View Results Tree

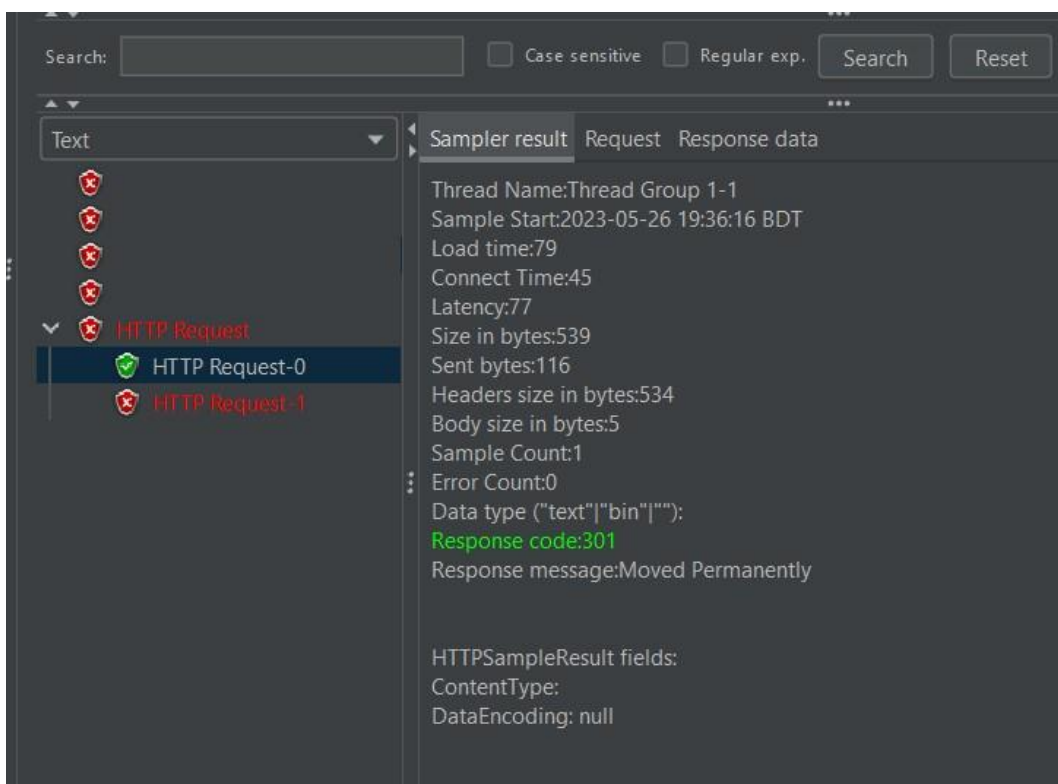


Figure 7: Result tree

2.7.2 View Results in table

Name: View Results in Table

Comments:

Write results to file / Read from file

Filename: Browse... Log/Display Only: ☐

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes
1	19:34:15.069	Thread Group 1-1		0		874	0
2	19:35:00.314	Thread Group 1-1		0		874	0
3	19:35:17.530	Thread Group 1-1		0		874	0
4	19:35:34.498	Thread Group 1-1		0		874	0
5	19:36:16.457	Thread Group 1-1	HTTP Request	548		8840	232

Figure 8: result table

2.7.3 Aggregate Graph

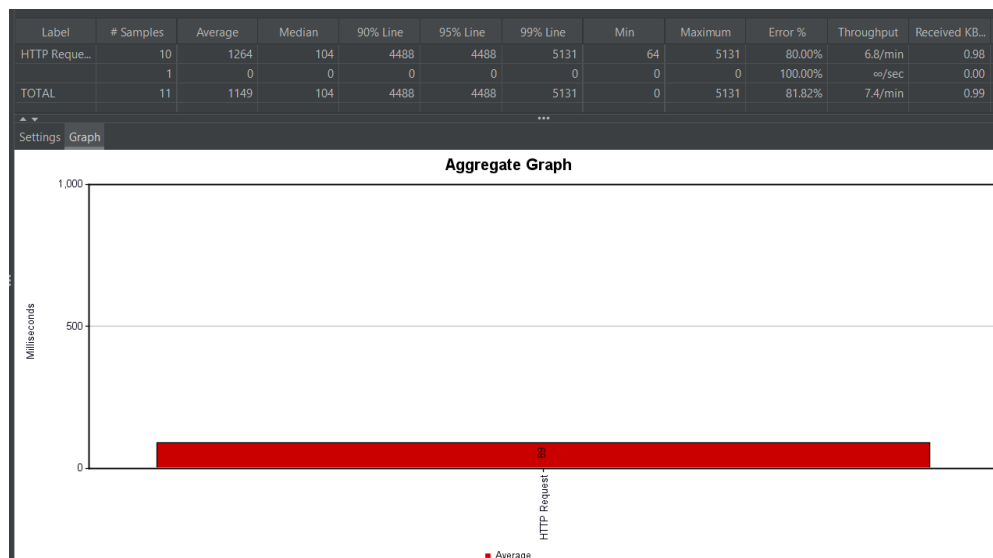


Figure 9: Graph

3 Conclusion

JMeter provides a broad outline of the steps involved in conducting web page performance testing. However, to enhance the precision of your tests and simulate real-world scenarios, JMeter offers a plethora of advanced capabilities and configurations that you can explore and utilize.