

Apache JMeter:

* JMeter is a software that can perform load test performance-oriented business test, regression test etc., on different protocols & technologies.

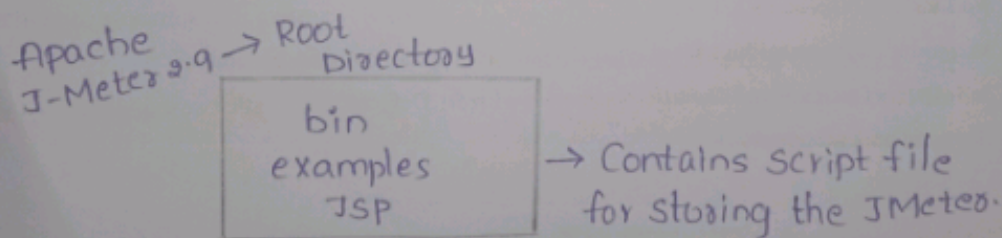
* JMeter is a java desktop application with graphical interface that uses the Swing graphical API.

Installation of Apache JMeter:

* Installation of JMeter is extremely easy and simple, you simply unzip the zip/tar file into the directory where you want JMeter to be installed.

* There is no tedious installation screen to deal with, simply unzip and you are done.

* Once the unzipping is done installation directory structure should look like as figure below.



* JMeter directory contains many files & directory

* /bin: Contains JMeter script file for starting JMeter

* /docs: JMeter documentation files

* /extras: Ant related extra files

* /lib: Contains the required Java library for JMeter.

* |lib|ext: Contains the core jar files for JMeter and the protocols.

* |lib|junit: JUnit library used for JMeter

* |printable docs:

* Launch JMeter:

you can start JMeter in 3 modes:

* GUI Mode

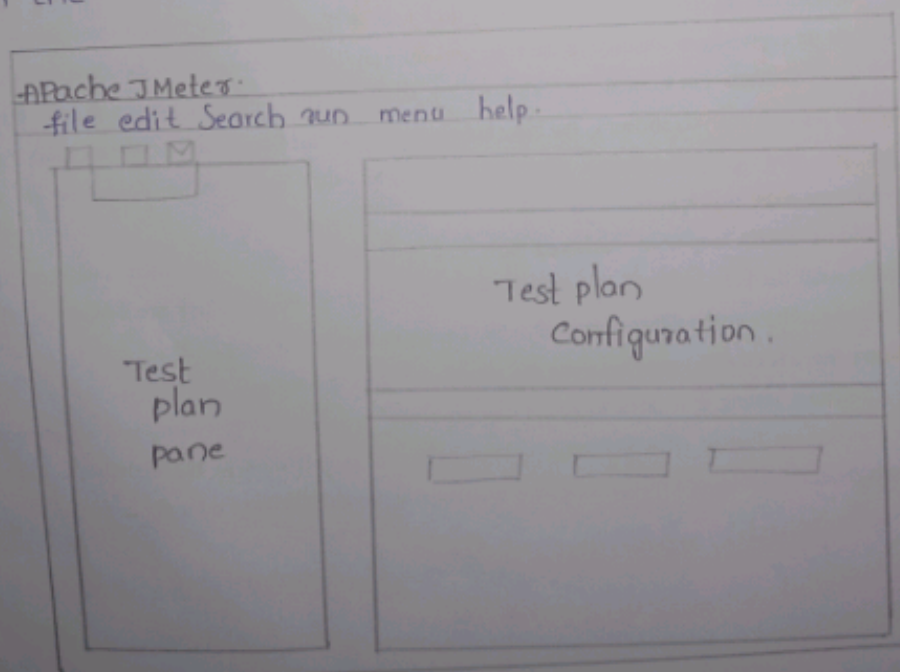
* Server Mode

* Command line Mode -

Start JMeter in GUI Mode:

If you are using window, just run the file |bin|jmeter.bat to start JMeter in GUI mode as shown below.

The following figure annotates the various components in the JMeter GUI:



* Build JMeter Test plan:

Let's start building a test plan by following these.

Simple Steps:

Step-1: launch the JMeter window

- * Go to your JMeter bin folder and double click on the Apache JMeter interface.

- * The following image shows the default JMeter interface without any additional elements added to it.

- * The default JMeter interfaces contains a test plan node where the real test plan is kept

- * The test plan node contains name of the test plan and user defined variables.

- * User defined variables provides flexibility when you have to repeat any value in any parts of the test plan.

Step-2: Add/remove test plan elements:

- * Once you have created a test plan for JMeter the next step is to add and remove elements to JMeter test plan.

- * Select the test plan node and right click on the selected item

- * Mouse hover on "Add" option, then element list will be displayed.

- * Mouse hover on desired list element and then select the desired option by clicking.

Step-3: Load and save test plan elements:

- * To Load elements to JMeter test plan tree, select and right click on any tree element on which you want to add the loaded element.
- * Select "merge" option.
- * Choose the ".jmx file" where you save the elements.
- * elements will be merged into the JMeter test plan tree.
- * To save the tree elements, right click on the element.
- * Choose the "Save selection As" option save file on desired location.

Step-4: Configuring the tree elements.

- * Elements in the test plan can be Configured by using Controls present on JMeter's right hand side frame.
- * The Control allow you to Configure the behaviour of the selected element.
- * For example, a threadgroup can be Configured by its name.

Step-5: Save JMeter test plan.

- * Till now we are done with creating test plan, adding an element and Configuring a Tree. Now, you can solve the entire test plan by choosing the "save" or "Save test plan As" from file menu.

Apache JMeter - Experiment-I

* Creating a Test plan

Step-1: Start JMeter

Step-2: Create a test plan.

Step-3: create a thread group that is right click on test plan, next add, next thread group.

Step-4: Add a sampler, that is http request

→ Add → Samplers → Http Request

WWW. gmail. com

path: /

Step-5: Add Listeners

— Add → Listeners

Step-6: → Summary → Summary Report

Step-7: save text plan with the extension of .jmx

Output: Summary Report.

Name:

Comments:

write results to file/read from file.

file name

Label	# Samples	Average	min	max	stddev	errors	throughput	Avg
HttpRequest	64869	60651	44	187037		95.16%		Bytes
Total	64069	60651	44	1876037		15.16%		1090360

Apache JMeter - Experiment - II

Creating a Test plan.

Step-1: Start JMeter

Step-2: Create a test plan.

Step-3: Create a thread group that is right, click on test plan

next add, next thread group.

Step-4: Add a Sampler, that is http request

→ Add → Sampler → HTTP Request
url: www.google.com

Step-5: Add listeners

→ Add → Listeners

→ Summary → Graph Results

Step-6: Save test plan with the extension of .jmx.

Step-7: run the test plan.

Output: Graph Results.

Name: GraphResults

Comments:

Write Results to the file/read from file

file name: output.

46922ms



ms

No. of Samples 50846

Latest Sample 1796724 Average: 68916

Deviation 269655

Throughput

medium 7230

Signature of the Staff Member

Signature of Head of the

Signature of the External Examiner

2024.07.30 16:00

Apache JMeter - Experiment - III

Creating a Test plan.

Step-1: Start JMeter

Step-2: Create a test plan.

Step-3: Create a thread group that is right click on test plan, next add, next thread group.

Step-4: Add a Sampler, that is http request

→ Add → Sampler → HTTP Request

URL: www.gmail.com

Path: /

Step-5: Add Listeners.

→ Add → Listeners

→ Summary - View Results tree.

Step-6: Save test plan with the extension of .jmx.

Step-7: Run the test plan.

No. of Experiments Conducted

Signature of Head of

Signature of the Staff Member

Signature of the External Examiner

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Output: View Result Tree.

Name: view Result Tree.

Sample Result:

Thread Name: Thread Group 1-1.

Sample Start: 2024-07-10 15:49:28 IST

Load time: 1979

Connect time: 115

Latency: 166

Size in bytes: 180572

Sent bytes: 1310

Header size in bytes: 6541

Body size in bytes: 174031

Sample Count: 1

Error Count: 0

Data type ("test"|"bin"|" "): test

Response Code: 200.

Response message: OK

HTTP Sample Result Fields:

Content Type: text/html; charset = UTF-8

Data Encoding: UTF-8

Note that you can press
Sensitivemode as well
TheWinRunnerwindow
opens onthescreen.

2. Double-clicktheobject



1. Click an object name
selectedobject.

2. Selectthepropertiesyouwa

- o To editthe ex
button,ordouble-clickth

- o To add a check in w
specifyarguments. Next
column.Note that if an
argumentsfor a check o
specified.)When checki
static textobjects.Youa

- o Tochangetheviewingop

3. ClickOKtoclosetheChe

Apache JMeter - Experiment - IV

Timers

JMeter Sends request without applying any delay b/w each other i.e b/w each Sampler or request. If you perform load testing or stress testing on your Server without any delay, it will be overloaded, then it will not be able to give realistic results and failed to stimulate real world user traffic experience.

* The time element can be added in a test plan to apply wait b/w each sample request

* Timer Element:

- * 1. constant timer
- * 2. Uniform timer
↓
Random.

Step-1: Create a thread group

Testplan → Add → Thread → ThreadGroup

Step-2: Create a Sampler HTTP Request

Testplan → Add → Sampler → HTTP Request

Server: kwlulul@gmail.com

path: /

Create another Sampler HTTP Request 1

Testplan → Add → Sampler → HTTP Request 1

Server: kwlulul-google.com

path: /

You can use a
of standard objects

To create a GUI

1. Choose Insert
for Multiple

the CHECKBOX
Create GUI

2. Click the Add

3. To add a new
a help window

4. The point in
repeating

5. Click the
. The Create

6. The

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Signature of the Internal Examiner

Signature of the External Examiner

Create another Sampler - Http Request 2.
Step-3: Create a Listener
Testplan → Add → Listener
→ Summary → View Results Tree.

* Uniform Random timer:
→ In Uniform Random timer we find 2 options 1 random
delay maximum (3000) and Constant delay offset (3000)

- To edit the expected value by
- To add a check in to specify argument Arguments column you must specify as if a default argument for certain property on certain property
- To change the view
- 7. To save the check list WinRunner captures the expected result