J-meter

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J-meter:

* It is a one type of opensource perfomance Testing tool from Apache Vendor.
* It doesn't required software installation but it requires to install jre (java ountime environment)

Jmeter components are

1. Test plan: It includes all testable elements including scripting, execution and Analysis.
2. WorkBench: It is a non testable element which will be used for Recording the script.

Transaction Controller:

Insert the transaction Controller for each webpage request to measure the response time.

Page
└ Insertparent
└ Logic Controller
└ Transaction Controller

Correlation:

It is a process to handle the data which is dynamically generated by the server using "Regular Expression Extractor"

step1: Include the non testable elements like Http Cache manager and HTTP Cookie manager to clear the cache and Cookies for every time

Replaying the script.

Path

(i) Threadgroup → Rightclick → Add → Configelement → HTTP Cache manager

(ii) Thread Group → Rightclick → Add → Configelement → HTTP Cookie mgr.

step2
Include the View Results Tree Listener to see Script Execution Status.

step3
Identify the Required Correlated Value in recorded Workflow.

step4 Run the Script once and goto View Results Tree.

step5 Navigate to the desired step in View Results Tree and Select "Regular Exp Tester".

step6: Manually Walk through the entire page response and find the Left and Right boundaries of Correlated Value.

step7: Apply the RegExpTester with all identify left and Right boundaries.

step8: Analyse the match numbers and template numbers of Correlated Value by apply the "RegExpTester".

step9:
Include the Regular Expression Extractor to Capture the Runtime data.

previous page request → Add → post processors → Regular Expression Extractor.

Step10:
Define all the arguments in "regular expression Ext.

Referencename: It is a Userdefined Variablename to save the data.

Regular Expression: Defined the Identify Regular Expression.

Template : Define the identified template number from the Regular Expression tested.

Match No: Define the identified matchnumber or Ordinal number from Regular expression tester

Step11: Insert Debug post processor to see the runtime Values.

Step12: Replace the variable name or reference name in all the places of identified correlated value.

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Timers (Think times):

It is a User wait time or Ideal time on any webpage before proceeding to the next page Request. The timers can be inserted at globally (Thread group) or locally

Global timers

Insert the timers globally on a Threadgroup which will Commonly wait before each Web page URL.

local timers:

Include the timers locally on each Webpage URL individually.

Constant timer: For all the Vusers Waiting time will be fixed on a webpage.

Uniform Random timers:

from User to User wait time will be changed b/w One to maximum defined range (milliseconds)

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Parameterisation:

Assign the multiple set of user inputs to replay the Script for different Vusers using "CSV Dataset Config"

Path

Parameterization Variable
↳ Add
↳ Configelement
↳ CSV Dataset Config.

Properties of CSV Dataset Config:

→ File name: filepath
→ File Encoding: UTF-8
→ Variable Names (Comma-delimited): username, password
→ Delimeter (use 't' for tab): ,
→ Allow Quoted data?: false
→ Recycle on EOF?: True
→ Stop Thread on EOF?: False
→ Sharing mode: All threads

Logic Controller:

Define the different types of logics to be applied to replay the recorded script.

1. IfController: Include this Controller to execute the script based upon the Conditions Satisfied is defined in Java script.

2. Once only Controller:

Include the transactions which will execute only once through out the test execution.

3. Loop Controller: Include the Loop Controller for all transactions which will repeatedly execute.

4. Transaction controller: Insert transaction controller for each webpage to measure the Response time.

5. Throughput Controller:

Define the expected Throughput per user throughput the test execution.

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Config elements:

1. CSV Data set Config: Include this Config element to Parameterize user inputs using CSV file.

2. HTTP Authorization Manager: It is a NTLM (Network Lan Manager) or Domain or HTTP to authenticate the Vuser on the given domain (It works like as WEB_SET_USER() function in LR).

Base URL
User name
password
Domain
Real
Mechanism

3. HTTP Cache Manager: Include this Config element to clear the Cache on each iteration.

4. HTTP Cookie Manager: Include this Config element to Clear the Cookies on each iteration.

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Testplan

Run Thread Groups Consecutively (i.e Run groups One at a time):

By enable This option in Testplan we can Run the Thread Groups one after the other. so once the first Thread Group finish then only the Second Thread Group start. Once the Second Thread Group finish then only the third Thread Group will start.

Heap Memory Configurations in Jmeter:

We Can define Heap parameters to Run Jmeter Smoothly With out any memory issues.

Ex:

During my application test execution Jmeter was Crashed so I have increased Heap parameters upto 1GB.

set HEAP = Xms 512m — Xmx 512m

Path: Jmeter → bin → Jmeter Batchfile → Edit

Even if increase the Heap Memory to the max limit still We have observe the out of memory issue and Jmeter Crash. So to overCome this issue. i executed the Jmeter in "Command line" or "non GUI mode".

non GUI mode execution:

Jmeter path -n -t Jmeterscriptpath(.jmx) -l

path of the Result-file (.JTL)

• Jtl file:

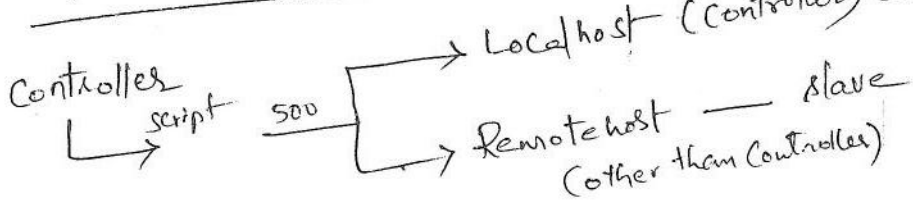
It collects the All Listeners data during nonGUI mode Test execution. So post test run we will include the same jtl file for all the Listeners to extract the data and analyse.

Perfmon:

It is a performance monitoring tool or utility for any Windows based server. We can Configure and Collect the various performance metrics on windows machine during the test execution.

Ex: 1. CPU (processor)
2. Memory (RAM)
3. Hard disk (physical disk)

LG's Configuration in Jmeter



Simple Data writer

When ever we are using the Master - slave Concept in that time we need add the additional Listener to collect the results and stored into a one csv file i.e simple data writer.

Path: Add → Listener → Simple Data Writer

Perfor

Perfmon metrics Collector:

By using this Listener we can Capture the System level performance metrics like CPU, Memory and Hard disk.

Step1: We need to add a seperate plugin to include this Listener

Step2: There are some configurations required get Controller and Servers machine to capture ~~the perfon~~ perfmon data at runtime.

Note

How to increase the Tps Rate:

By Increasing the Load we will increase the Tps. With out increasing Load, by Ignoring think and Pacing times we will increase the little bit of ~~time~~. Transactions per second.

1 sec = 1000 msec

1 min = 60 sec

1 hr = 60 min = 3600 sec

1 day = 24 hrs = 86,400 sec

1 month = 30 days = 2,59,2,000 sec

25,92,000 sec

Note:

Lr will execute the code as function by function (or) step by step

Whereas in Jmeter will execute the code as line by line (or) parameter by parameter