

An Exercise on Apache JMeter (<http://jakarta.apache.org/jmeter/>)

For the latest version, go to Moodle (or tepandi.ee).

1. Getting started and Hello World (to ensure that JMeter is up and working)

- See <http://jakarta.apache.org/jmeter/usermanual/get-started.html>
- Download (the file may be apache-jmeter-2.13.zip or similar) and unzip JMeter, if not already done
- Start JMeter - run jmeter.bat from the folder where the unzip was done; may be in C:\Program Files\jMeter\í \bin\jmeter.bat)
- Open a sample test plan (eg File -> Open ó> Examples -> CSVSample.jmx)
- Select "View Results in Table" (in the left hand window tree), then Run ó> Start
- See the results table and the test files (eg files in í \bin\examples\...). Go through the left hand window tree with right clicks => help. Explain the test and the results (see also point 3 below). Try change (eg, sleep time).
- Close JMeter

2. First tests: Basic test plan (to have a basic understanding of testing with JMeter)

- Follow <http://jakarta.apache.org/jmeter/usermanual/build-web-test-plan.html> to build a basic test plan (minimum: test plan -> thread group, HTTP request, listener View results in table)
- Run the thread group (Run->Start)
- Understand the Graph Results view:
 - How is the value "No of samples" computed?
 - How many dots, why?
 - Select different items to be displayed on the graph.
 - Why is average decreasing (if it is; hit: see table)?
 - Is the "Average" value reasonable?
 - What does "Latest sample" mean (hint: see the table)?
 - Is the Throughput value reasonable (hint: use the table to find total time and compare this with the number of requests)?
- Compare the latest sample value in the graph, tree and table.
- Are the load start times in the table reasonable? (hint: Ramp-up period from the Thread Group / the Number of Threads)
- In what sequence are the requests executed (hint: see Thread Names in the table)? Why this sequence? If you insert Ramp-up period=0, why the sequence changes?
- Which of the sites loads faster? What may be the reason?
- Why so large differences in load times, even if the sizes are not so different? Why might the load times change in the sequence?... etc

- Remark: Be careful when repeating test runs for the same website. It may be a good idea to reduce the number of requests. It is safer to try the following example
3. Experiment with a safe test (to understand JMeter deeper)
 - Open a sample test plan as in Section 1 (CSVSample.jmx). See associated csv files (hint: see the examples folder)
 - How is this test operating? Why is it safe to experiment?
 - Run, see the results in the table. Why u2 is tested? Why no actions for u2?
 - Delete the table and tree contents (Run-> Clear)
 - Change the thread parameters (eg number of threads), run, explain the results
 - How to cycle the test for more requests? (hint: Get user detailsí Recycle on EOF)
 - Add Graph Results and other listeners (to the top node)
 - Let the test run in cycle, interpret the Graph Results. Are the Data values converging? The others? Explain.
 4. JMeter and Selenium.
 - Can JMeter be used as a functional testing tool? Selenium as a load testing tool?
 - Try recording tests, compare (http://jakarta.apache.org/jmeter/usermanual/jmeter_proxy_step_by_step.pdf). Is it easier than to write tests?
 5. See other materials, eg JMeter wiki (<http://wiki.apache.org/jakarta-jmeter/>). See also <http://jakarta.apache.org/jmeter/usermanual/boss.html> etc