Hello,

In the followings I will try to describe the HW and SW requirements needed to perform the tests, as well as how the population of the DB is done.

First of all we will need a HW and SW which can be tested. This should contain the server application under test, an initial DB. This very same configuration will serve the future users on the real life, released application, but with different data, of course. These servers are provided by amazon. For details see HW Requirements point 2.

Beside this will be need a PC/MAC which will run the test (simulation several virtual users in different scenarios and collecting some key data). This PC/MAC will be used also to populate the databases.

**HW requirements:**

1. A Test PC or MAC, where the test scenarios or DB populating actions are done. For this we used a PC (Intel-Core [i5-2500@3.3GHz](mailto:i5-2500@3.3GHz) with 4GB RAM), but it also can be performed on a MAC.

The Tool used for testing is Apache Jmeter (<http://jmeter.apache.org/>) it can be run on both operating systems.

1. Instances of Amazon sever
   1. 1 or more amazon ec2 instances (depending on needs) were the server side application is installed and running.

Currently we have 2 medium size amazon instances (1 vCPU, 2 ECU, 3.75GB RAM, 1x410GB Storage, moderate Network performance) , behind a load balancer which transfers the request to one of the instances depending on their load. For more details regarding amazon instance types check: <http://aws.amazon.com/ec2/instance-types/>

* 1. 1 Amazon RDS Server Instance (medium size with 20GB Storage).  This instance serves as a database server for the application.

For more details about RDS instances you can find at: aws.amazon.com/rds/

* 1. 1 S3 Amazon Instance where all kind (originals, resizes thumbnails, user profile, quest images, microactions images etc.) of pictures are stored. (Details <http://aws.amazon.com/s3/>)

**Populating DB:**

The initial install of the server side application contains only a “empty” DB, having only 1/few default user(s), the default quests and microactions.

For doing some life relevant tests we need to populate the DB with some data. This DB should be saved/dumped and restored before starting a set of tests.

Currently we have three configurations of DBs. Let’s say small, medium and big databases.

The key numbers for the databases are,

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | users | quest | microactions | Name |
| Medium | 10003 | 301 | 1793 | DB1 |
| Small | 1001 | 31 | 243 | DB2 |
| Big | 250001 | 51 | 1005 | DB3 |

but the databases contains much more than that. You can find in the attachment (DB\_Details.xlsx)

Populating DB is done using two different tools.

Adding Quest and Microactions is done using the Selenium IDE and the actions are done through the web GUI of the server. This actually simulates the actions done by the administrator who manually creates Quests and adds microactions for these quests.

More details about Selenium: <http://www.seleniumhq.org/projects/ide/>

Of course a set of quest and microaction pictures (with correct size) will be needed. This tool will upload also the pictures.

All the other actions can be performed using the Jmeter tool.

For example for creating users we can run the “Create Users” scenario with the desired number of users with an input file containing users relevant data. (email, password, First name, Last name, Country, picture)

Beside this some Jmeter scenarios can be run, in order to populate the database with comments, loves and tags.

**Test Running:**

Running the test after restoring the saved DB is performed only from Jmeter.

**Collecting Metric data:**

Avg. response time, Avg. Throughput, Max. Active threads (Active threads in time),  Timeout errors are collected from the Jmeter Listeners.

Server relevant Metrics such as Server side CPU Usage, DB Server CPU Usage, DB Connetions, DB Write IOPS, or several others, are collected from the service provided by amazon:

<https://console.aws.amazon.com/ec2/v2/home?region=us-west-1#Instances> and <https://console.aws.amazon.com/rds/home?region=us-west-1>