

Single Windows 2008 64 bits 8GB RAM 8 Core 2.4GHz

Single Server Windows 2008 Enterprise Server 64 bits

Hardware

- 8 x 2.4 GHz Core Bare Metal Instance - 8 GB Ram [See softlayer.com cloud computing]

Software

- MySQL Server 5.5.10
- Java JDK 1.6.0_24
- JBoss 4.0.2 (LAMS 2.3.5 Server)

Relevant configuration files

server.xml

```
<Connector port="8080" address="{jboss.bind.address}" URIEncoding="UTF-8"
  maxThreads="1024" strategy="ms" maxHttpHeaderSize="8192" acceptCount="600" connectionTimeout="500"
  emptySessionPath="true"
  enableLookups="false" redirectPort="8443" minSpareThreads="25" maxSpareThreads="75"
  disableUploadTimeout="true"/>
```

run.bat

```
set JAVA_OPTS=%JAVA_OPTS% -server -Xms1024m -Xmx2048m -XX:MaxPermSize=130m -XX:NewSize=256m -XX:MaxNewSize=256m
-XX:SurvivorRatio=95
```

Test harness

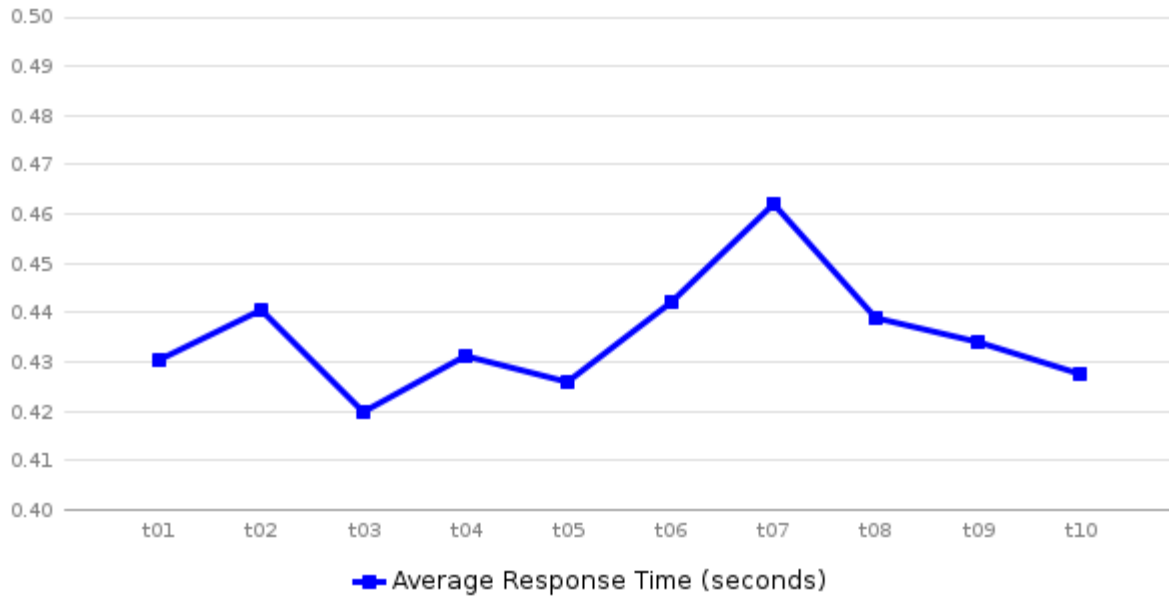
As all our previous scalability tests, we use the [test harness](#) to simulate users load. Learner's configuration mindelay = 15, maxdelay = 90. Sequence: 10forums.zip

Results

We ran two test with 800 and 1000 concurrent users.

800 concurrent users

We choose the 10forums.zip sequence that contains ten forums activities on a row
Using 10 instances of the test harness from 10 separate boxes simulating 80 users each, we've got the following results:

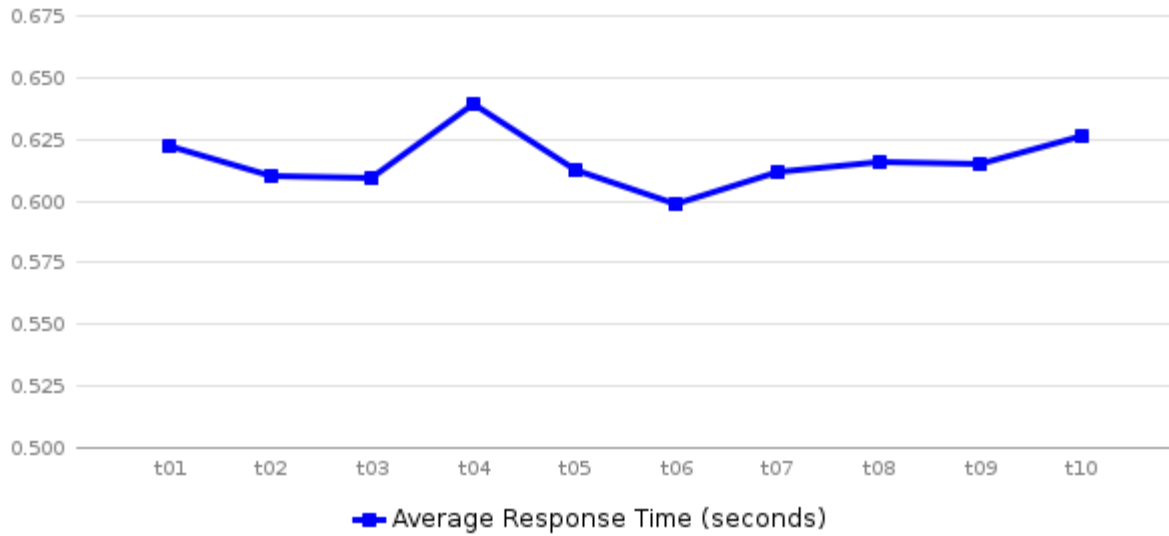


instance	Average response (in seconds)
t01	0.4302724692526017
t02	0.44035452045932394
t03	0.41999870024370434
t04	0.4311155787348587
t05	0.42608701134930643
t06	0.4421872930789847
t07	0.46224824890047245
t08	0.43905379959650304
t09	0.434177057793345
t10	0.42769592976855547
Total Average:	0.435319061

So for every page request, with 800 users in LAMS at the time, the cluster is able to responde in 0.43 second in average.

1000 concurrent users

We choose the 10forums.zip sequence that contains ten forums activities on a row
 Using 10 instances of the test harness from 10 separate boxes simulating 100 users each, we've got the following results:



instance	Average response (in seconds)
t01	0.6224203882177277
t02	0.6107075201665366
t03	0.6091387683125339
t04	0.6393892285677116
t05	0.6124708438463695
t06	0.5986353276353277
t07	0.6119194191798308
t08	0.6158656115507427
t09	0.6149111536010198
t10	0.6263452672247263
Total Average:	0.616180353

So for every page request, with 1000 users in LAMS at the time, the cluster is able to responde in 0.62 second in average.

Raw results

800 concurrent users

800

t1

80 learner(s) attended, 80 finished and 0 aborted.
Total response time: 2728.788 seconds
Average response time: 0.4302724692526017 seconds

t2

80 learner(s) attended, 78 finished and 2 aborted.
Total response time: 2722.712 seconds
Average response time: 0.44035452045932394 seconds

t3

80 learner(s) attended, 77 finished and 3 aborted.
Total response time: 2585.092 seconds
Average response time: 0.41999870024370434 seconds

t4

80 learner(s) attended, 74 finished and 6 aborted.
Total response time: 2562.551 seconds
Average response time: 0.4311155787348587 seconds

t5

80 learner(s) attended, 80 finished and 0 aborted.
Total response time: 2703.096 seconds
Average response time: 0.42608701134930643 seconds

t6

80 learner(s) attended, 80 finished and 0 aborted.
Total response time: 2804.794 seconds
Average response time: 0.4421872930789847 seconds

t7

80 learner(s) attended, 77 finished and 3 aborted.
Total response time: 2837.742 seconds
Average response time: 0.46224824890047245 seconds

t8

80 learner(s) attended, 75 finished and 5 aborted.
Total response time: 2611.492 seconds
Average response time: 0.43905379959650304 seconds

t9

80 learner(s) attended, 72 finished and 8 aborted.
Total response time: 2479.151 seconds
Average response time: 0.434177057793345 seconds

t10

80 learner(s) attended, 79 finished and 1 aborted.
Total response time: 2679.515 seconds
Average response time: 0.42769592976855547 seconds

1000 concurrent users

t1
100 learner(s) attended, 92 finished and 8 aborted.
Total response time: 4585.371 seconds
Average response time: 0.6224203882177277 seconds

t2
100 learner(s) attended, 97 finished and 3 aborted.
Total response time: 4693.898 seconds
Average response time: 0.6107075201665366 seconds

t3
100 learner(s) attended, 93 finished and 7 aborted.
Total response time: 4490.571 seconds
Average response time: 0.6091387683125339 seconds

t31
100 learner(s) attended, 97 finished and 3 aborted.
Total response time: 4914.985 seconds
Average response time: 0.6393892285677116 seconds

t4
100 learner(s) attended, 89 finished and 11 aborted.
Total response time: 4369.367 seconds
Average response time: 0.6124708438463695 seconds

t5
100 learner(s) attended, 93 finished and 7 aborted.
Total response time: 4412.541 seconds
Average response time: 0.5986353276353277 seconds

t6
100 learner(s) attended, 79 finished and 21 aborted.
Total response time: 3834.899 seconds
Average response time: 0.6119194191798308 seconds

t7
100 learner(s) attended, 90 finished and 10 aborted.
Total response time: 4436.08 seconds
Average response time: 0.6158656115507427 seconds

t8
100 learner(s) attended, 99 finished and 1 aborted.
Total response time: 4823.978 seconds
Average response time: 0.6149111536010198 seconds

t9
100 learner(s) attended, 98 finished and 2 aborted.
Total response time: 4863.571 seconds
Average response time: 0.6263452672247263 seconds