Performance Analysis

ÁNGEL DELGADO LUNA
BELÉN GARRIDO LÓPEZ
MARÍA DE GRACIA PIÑERO PASTOR
EZEQUIEL PORTILLO JURADO
ALEJANDRO RODRÍGUEZ DÍAZ

GROUP 6 | DESIGN AND TESTING

Content

Our systems

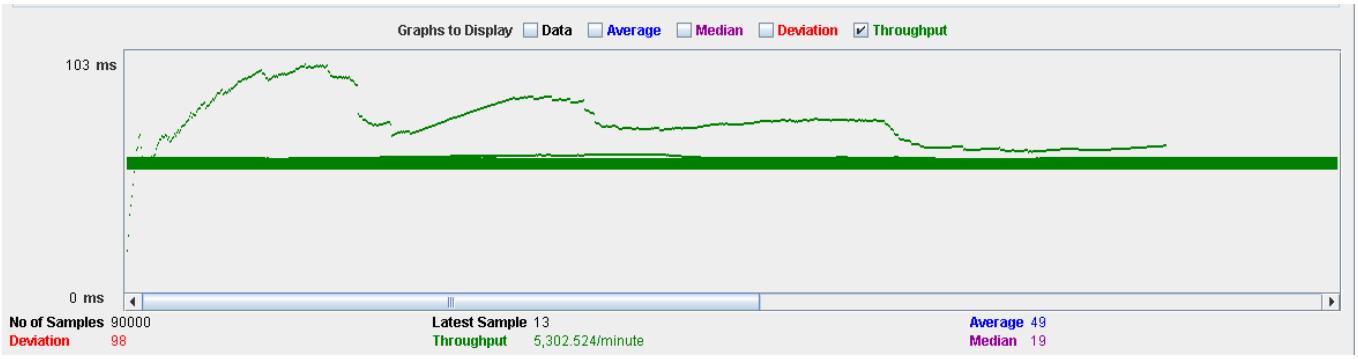
	Alejandro's PC	Ezequiel's PC	Belén's Pc
CPU	Intel Core i7 6700 HQ	Intel Core i7 6700 HQ	Intel Core i7 4790
RAM	12,0 GB	16,0 GB	16,0 GB
Graphic Card	NVIDIA GeForce GTX 950M	NVIDIA GeForce GTX 960M	NVIDIA GeForce GTX 960

Use Case Test 1

- A non-authenticated user registers as a hacker. Then, he logs into the system and creates a social network profile, as well as going to the inbox and sending a message to the trash.
- Number of threads: 50
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/actor/createHacke...	5000	22	10	40	4	1243	0.00%	4.9/sec	35.7
/actor/edit.do	5000	36	22	65	13	750	0.00%	4.9/sec	35.7
/j_spring_security_...	10000	19	9	36	2	740	0.00%	9.8/sec	28.8
/	15000	17	7	33	3	1273	0.00%	14.7/sec	42.5
/security/login.do	5000	6	5	9	2	265	0.00%	4.9/sec	14.4
/j_spring_security_...	5000	51	17	123	6	2015	0.00%	4.9/sec	16.8
/profile/list.do	10000	48	34	91	6	1705	0.00%	9.9/sec	67.5
/profile/create.do	5000	24	8	45	3	1080	0.00%	4.9/sec	19.3
/profile/edit.do	5000	298	251	590	13	1998	0.00%	4.9/sec	27.2
/box/list.do	5000	39	24	78	5	1214	0.00%	4.9/sec	22.6
/message/list.do	10000	49	37	97	7	782	0.00%	9.9/sec	43.6
/message/show.do	5000	55	35	108	15	1534	0.00%	4.9/sec	23.2
/message/dbox.do	5000	65	36	132	12	1569	0.00%	4.9/sec	25.0
TOTAL	90000	49	19	105	2	2015	0.00%	88.4/sec	400.5

1 Aggregate report of use case 1



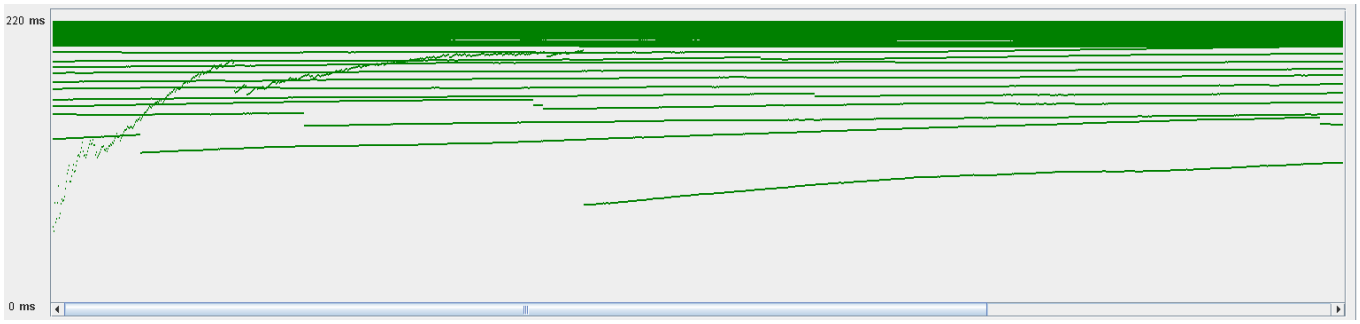
2 Graph results of use case 1

Use Case Test 2

- A user authenticated as an administrator registers another administrator.
- Number of threads: 200
- Loop count: 100

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	40000	7	6	10	2	2607	0.00%	57.4/sec	169.3
/j_spring_security_check	40000	139	55	364	3	3009	0.00%	57.4/sec	212.1
/	100000	68	19	179	2	2808	0.00%	142.6/sec	454.2
/actor/createAdmin.do	20000	105	31	271	5	3225	0.00%	28.8/sec	228.0
/actor/edit.do	20000	116	51	270	8	2654	0.00%	28.8/sec	230.2
/j_spring_security_logout	40000	78	24	200	2	2460	0.00%	57.4/sec	169.2
/position/listCompanies.do	20000	77	23	200	3	2387	0.00%	28.8/sec	124.1
/position/list.do	20000	73	23	184	4	2293	0.00%	28.8/sec	110.8
/position/showCompany.do	20000	69	21	176	5	2582	0.00%	28.8/sec	182.2
TOTAL	320000	77	21	201	2	3225	0.00%	456.4/sec	1868.2

3 Aggregate report of use case 2



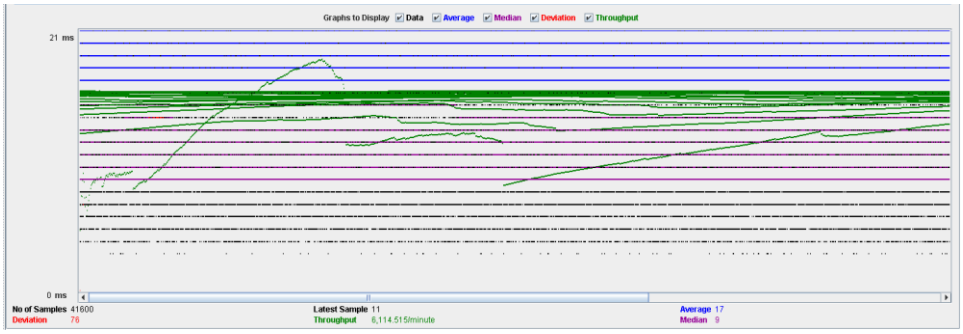
4 Graph results of use case 2

Use Case Test 3

- A user authenticated as administrator edits the customisation system and checks the dashboard of the system, in addition, sends a broadcast message.
- Number of threads: 80
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/	9600	14	8	17	4	1302	0.00%	23.5/sec	66.1
/security/login.do	3200	7	6	11	3	68	0.00%	8.0/sec	24.0
/j_spring_security_check	3200	24	15	30	5	550	0.00%	8.0/sec	24.2
/customisation/administrator/custom.do	3200	10	9	15	3	364	0.00%	8.0/sec	25.5
/customisation/administrator/edit.do	3200	10	9	14	3	334	0.00%	8.0/sec	25.5
/welcome/index.do	3200	9	9	12	4	43	0.00%	8.0/sec	22.6
/customisation/administrator/dashboard.do	3200	10	9	13	3	297	0.00%	8.0/sec	25.5
/message/create.do	3200	37	6	10	3	2234	0.00%	8.0/sec	77.5
/message/send.do	3200	41	21	36	12	1814	0.00%	8.1/sec	78.0
/message/list.do	3200	6	6	11	3	44	0.00%	8.1/sec	78.0
/j_spring_security_logout	3200	22	11	22	6	1368	0.00%	8.1/sec	23.8
TOTAL	41600	17	9	20	3	2234	0.00%	101.9/sec	460.1

5 Aggregate report of use case 3



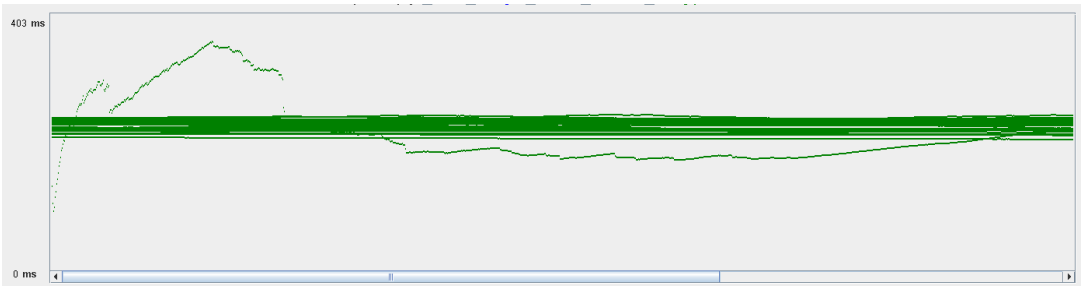
6 Graph results of use case 3

Use Case Test 4

- A non-authenticated user searches for position. Then, he authenticates as a company and creates two problems, which he edits. In addition, he creates a position and then edits it.
- Number of threads: 50
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/position/finder.do	2000	87	8	146	4	6650	0.00%	1.8/sec	5.9
/position/search.do	2000	84	13	125	7	5532	0.00%	1.8/sec	5.7
/security/login.do	2000	14	6	19	3	520	0.00%	1.8/sec	5.4
/j_spring_security_check	2000	153	16	380	8	5275	0.00%	1.8/sec	6.5
/	6000	65	8	102	4	5088	0.00%	5.4/sec	15.9
/problem/company/list.do	10000	203	93	400	17	5323	0.00%	9.1/sec	73.8
/problem/company/creat...	4000	123	24	242	9	7125	0.00%	3.7/sec	20.9
/problem/company/edit....	8000	467	242	1058	12	8529	0.00%	7.3/sec	66.0
/problem/company/upd...	4000	314	190	633	28	5840	0.00%	3.7/sec	21.1
/position/company/creat...	2000	92	17	174	8	3420	0.00%	1.9/sec	11.1
/position/edit.do	2000	100	24	170	14	3879	0.00%	1.9/sec	11.4
/position/list.do	2000	92	16	151	9	5732	0.00%	1.9/sec	8.8
/j_spring_security_logout	4000	70	11	107	4	4859	0.00%	3.7/sec	10.9
TOTAL	50000	189	49	445	3	8529	0.00%	45.3/sec	260.4

7 Aggregate report of use case 4



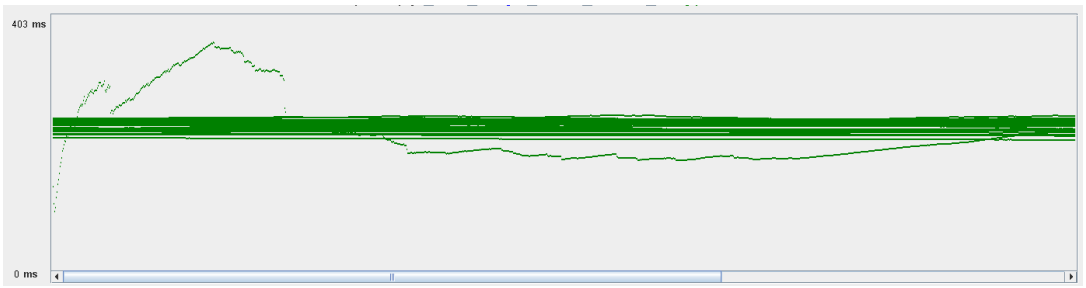
8 Graph results of use case 4

Use Case Test 5

- A user authenticated as a company edits two problems, relating them to a problem, which is saved in final mode.
- Number of threads: 100
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/position/finder.do	2000	87	8	146	4	6650	0.00%	1.8/sec	5.9
/position/search.do	2000	84	13	125	7	5532	0.00%	1.8/sec	5.7
/security/login.do	2000	14	6	19	3	520	0.00%	1.8/sec	5.4
/j_spring_security_check	2000	153	16	380	8	5275	0.00%	1.8/sec	6.5
/	6000	65	8	102	4	5088	0.00%	5.4/sec	15.9
/problem/company/list.do	10000	203	93	400	17	5323	0.00%	9.1/sec	73.8
/problem/company/creat...	4000	123	24	242	9	7125	0.00%	3.7/sec	20.9
/problem/company/edit....	8000	467	242	1058	12	8529	0.00%	7.3/sec	66.0
/problem/company/upd...	4000	314	190	633	28	5840	0.00%	3.7/sec	21.1
/position/company/creat...	2000	92	17	174	8	3420	0.00%	1.9/sec	11.1
/position/edit.do	2000	100	24	170	14	3879	0.00%	1.9/sec	11.4
/position/list.do	2000	92	16	151	9	5732	0.00%	1.9/sec	8.8
/j_spring_security_logout	4000	70	11	107	4	4859	0.00%	3.7/sec	10.9
TOTAL	50000	189	49	445	3	8529	0.00%	45.3/sec	260.4

9 Aggregate report of use case 5



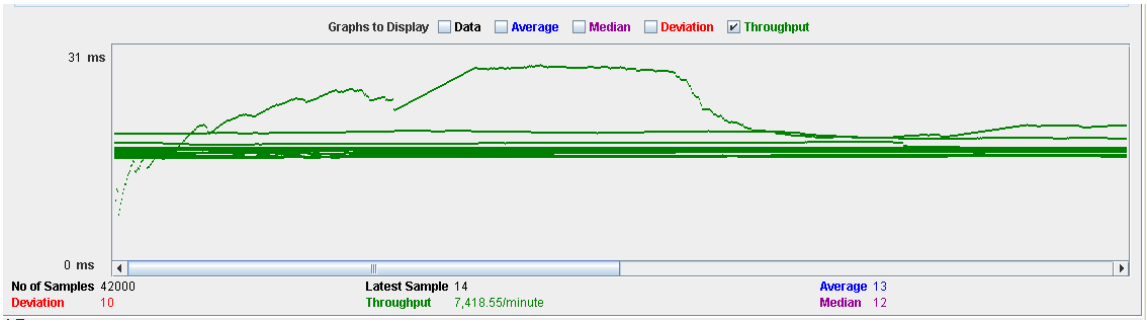
10 Graph results of use case 5

Use Case Test 6

- A user authenticated as a hacker creates an application. Then he creates an answer and displays it. Finally, it also displays the application.
- Number of threads: 70
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	2800	5	5	10	2	33	0.00%	8.4/sec	25.1
/j_spring_security...	2800	13	12	21	7	756	0.00%	8.4/sec	28.6
/	5600	6	6	9	4	32	0.00%	16.5/sec	48.8
/position/list.do	2800	8	7	10	5	44	0.00%	8.4/sec	30.8
/application/hacke...	2800	20	16	37	11	117	0.00%	8.4/sec	100.5
/application/hacke...	2800	36	33	50	25	187	0.00%	8.4/sec	57.8
/application/hacke...	5600	14	13	19	9	147	0.00%	16.6/sec	70.4
/success.txt	2800	12	12	15	9	55	0.00%	8.4/sec	3.1
/problem/hacker/s...	2800	10	8	19	5	50	0.00%	8.4/sec	81.8
/answer/hacker/cr...	2800	19	16	37	11	60	0.00%	8.4/sec	82.9
/answer/hacker/e...	2800	14	13	19	10	39	0.00%	8.4/sec	81.8
/answer/hacker/s...	2800	9	7	17	4	40	0.00%	8.4/sec	81.6
/j_spring_security...	2800	10	8	16	3	400	0.00%	8.4/sec	24.6
TOTAL	42000	13	12	27	2	756	0.00%	123.6/sec	706.9

11 Aggregate report of use case 6



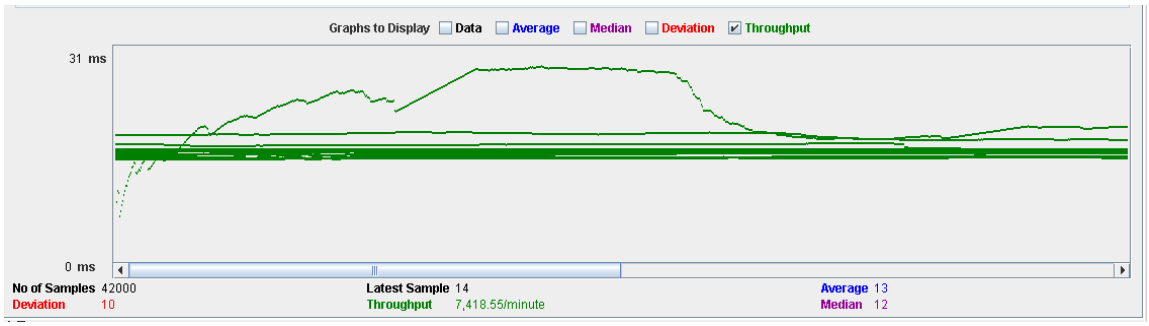
12 Graph results of use case 6

Use Case Test 7

- A user authenticated as a hacker uses the search engine and finds some positions.
- Number of threads: 80
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	3200	4	5	6	2	21	0.00%	8.7/sec	25.2
/j_spring_security_check	3200	13	13	16	5	57	0.00%	8.7/sec	29.4
/	6400	7	7	8	4	38	0.00%	17.0/sec	50.3
/position/finder.do	6400	9	10	11	6	45	0.00%	17.1/sec	85.5
/position/search.do	6400	34	16	20	10	4345	0.00%	17.1/sec	62.7
/j_spring_security_logout	3200	10	9	11	5	791	0.00%	8.7/sec	25.5
TOTAL	28800	14	10	17	2	4345	0.00%	76.4/sec	275.8

13 Aggregate report of use case 7



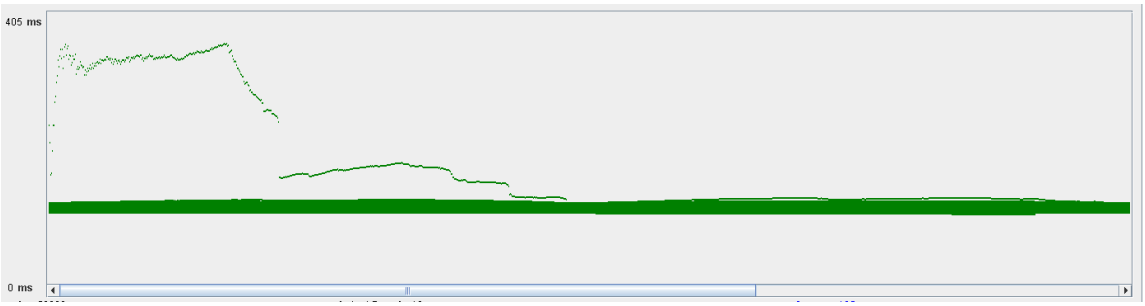
14 Graph results of use case 7

Use Case Test 8

- A user authenticated as a hacker creates a resume, as well as a pair of education data, which then he edits and deletes one of them.
- Number of threads: 70
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	2800	8	5	15	2	444	0.00%	2.9/sec	8.6
/j_spring_security_check	2800	135	14	266	4	6895	0.00%	2.9/sec	9.8
/	5600	81	7	116	3	8593	0.00%	5.7/sec	16.7
/curricula/hacker/list.do	5600	146	57	257	7	7001	0.00%	5.8/sec	40.5
/curricula/hacker/create....	2800	107	12	166	6	6649	0.00%	2.9/sec	12.8
/curricula/hacker/edit.do	2800	251	67	552	7	8762	0.00%	2.9/sec	25.4
/curricula/hacker/show.do	11200	243	97	507	8	8078	0.00%	11.4/sec	105.0
/posData/hacker/create....	2800	275	90	654	10	6517	0.00%	2.9/sec	16.7
/posData/hacker/edit.do...	8400	349	113	933	4	10771	0.00%	8.6/sec	65.9
/posData/hacker/edit.do	5600	175	14	470	3	6748	0.00%	5.7/sec	56.1
/j_spring_security_logout	2800	96	13	150	3	5590	0.00%	2.9/sec	8.5
TOTAL	53200	195	48	444	2	10771	0.00%	53.7/sec	360.9

15 Aggregate report of use case 8



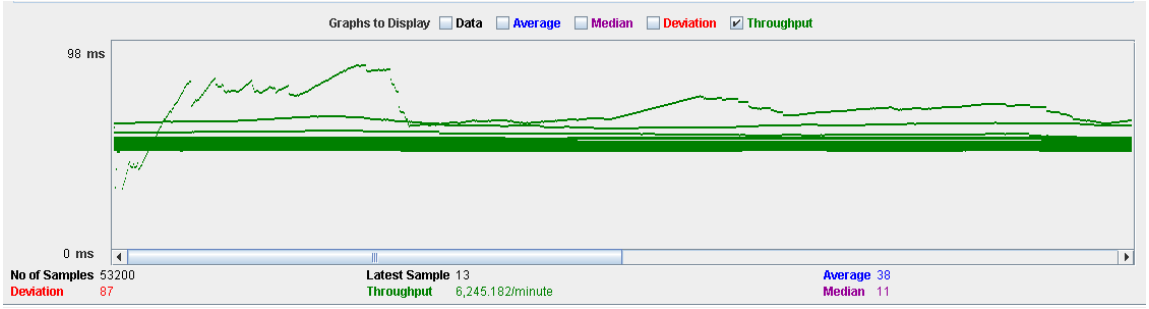
16 Graph results of use case 8

Use Case Test 9

- An authenticated user notices some of your messages in the out box. Then, he creates a new box and copies the message to it.
- Number of threads: 70
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	2800	6	5	10	2	69	0.00%	5.6/sec	16.7
/j_spring_security...	2800	36	12	64	5	1499	0.00%	5.6/sec	19.7
/	5600	13	6	14	3	831	0.00%	11.0/sec	33.1
/images/arrow_do...	2800	2	2	4	1	59	0.00%	5.6/sec	2.5
/message/create....	2800	48	22	100	9	1365	0.00%	5.6/sec	29.4
/message/send.do	2800	188	132	338	28	3314	0.00%	5.6/sec	50.5
/message/list.do	8400	69	49	153	6	1194	0.00%	16.6/sec	130.9
/message/show.do	8400	27	12	40	8	1388	0.00%	16.5/sec	165.1
/box/list.do	5600	29	10	48	6	1576	0.00%	11.1/sec	59.0
/box/create.do	2800	19	6	32	3	775	0.00%	5.6/sec	19.8
/box/edit.do?pare...	2800	20	8	24	4	1114	0.00%	5.6/sec	20.5
/message/dbox.do	2800	14	10	22	6	520	0.00%	5.6/sec	61.2
/j_spring_security...	2800	12	8	14	6	1705	0.00%	5.6/sec	16.3
TOTAL	53200	38	11	103	1	3314	0.00%	104.1/sec	617.3

17 Aggregate report of use case 9



18 Graph results of use case 9

Use Case Test 10

- An authenticated user exports their data and then deletes their account.
- Number of threads: 80
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/	9600	7	7	8	4	26	0.00%	32.7/sec	89.2
/security/login.do	3200	4	5	6	3	27	0.00%	11.2/sec	32.6
/j_spring_security_check	3200	14	14	18	6	775	0.00%	11.2/sec	40.4
/actor/personal.do	3200	4	5	6	3	22	0.00%	11.3/sec	107.8
/actor/export.do	3200	4	5	6	3	21	0.00%	11.2/sec	107.2
/actor/delete.do	3200	4	5	6	2	27	0.00%	11.2/sec	107.2
/j_spring_security_logout	3200	9	9	11	6	40	0.00%	11.2/sec	32.9
TOTAL	28800	7	6	13	2	775	0.00%	98.0/sec	505.0

19 Aggregate report of use case 10

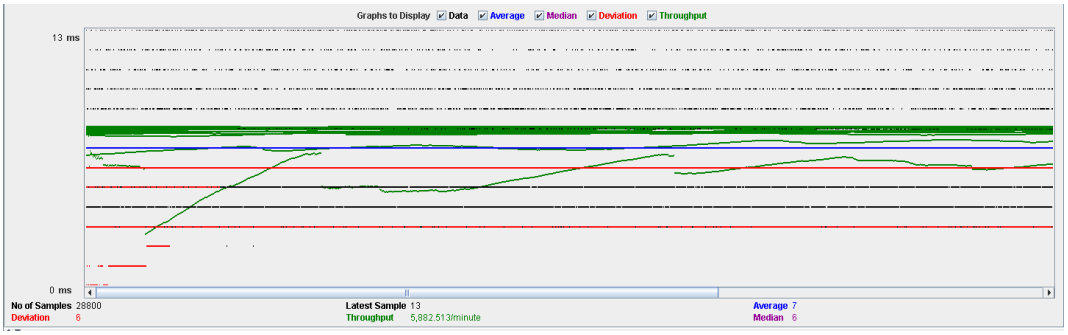
20 Graph results of use case 10

Use Case Test 11

- A user authenticated as a company updates the status of an application.
- Number of threads: 100
- Loop count: 100

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	4000	5	5	9	2	30	0.00%	8.9/sec	26.7
/j_spring_security...	4000	12	11	20	6	449	0.00%	8.9/sec	31.4
/	8000	6	6	11	4	67	0.00%	17.5/sec	52.8
/position/list.do	4000	13	11	25	8	47	0.00%	8.9/sec	40.0
/application/comp...	12000	17	15	25	10	565	0.00%	26.5/sec	111.1
/images/arrow_off...	4000	2	2	3	1	13	0.00%	8.9/sec	3.9
/answer/company/...	4000	10	8	18	6	96	0.00%	8.9/sec	34.6
/application/comp...	4000	23	17	38	13	578	0.00%	8.9/sec	60.7
/application/comp...	4000	52	42	67	23	997	0.00%	8.9/sec	44.5
/application/comp...	4000	15	11	27	8	204	0.00%	8.9/sec	58.0
/j_spring_security...	4000	10	9	17	3	98	0.00%	8.9/sec	26.3
TOTAL	56000	15	11	31	1	997	0.00%	122.4/sec	481.6

21 Aggregate report of use case 11



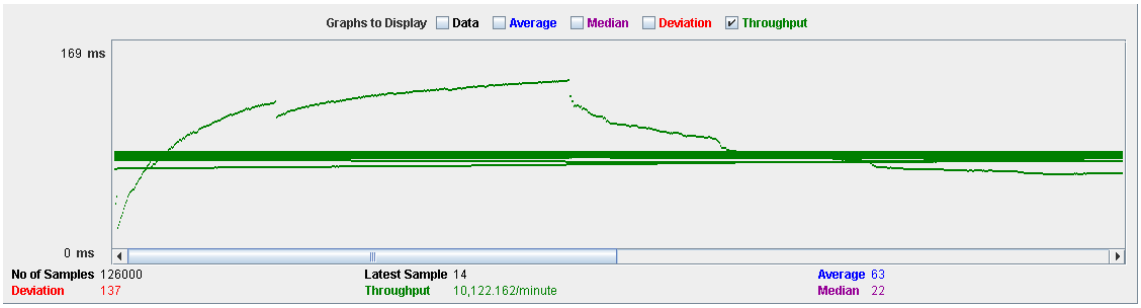
22 Graph results of use case 11

Use Case Test 12

- A user authenticated as an auditor creates an audit which then he edits and shows. He also edits his personal profile.
- Number of threads: 150
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	6000	6	6	10	2	245	0.00%	8.2/sec	26.4
/j_spring_security...	6000	94	24	256	6	3548	0.00%	8.2/sec	27.1
/	12000	70	17	187	3	2632	0.00%	16.1/sec	48.8
/position/listPositi...	6000	25	9	37	5	2072	0.00%	8.2/sec	28.4
/audit/auditor/list.do	36000	63	26	135	12	4454	0.00%	48.4/sec	327.0
/audit/auditor/crea...	12000	20	10	32	5	2546	0.00%	16.3/sec	64.0
/audit/auditor/edit....	12000	37	22	67	7	2130	0.00%	16.3/sec	65.0
/audit/show.do	6000	38	15	82	4	2428	0.00%	8.2/sec	26.2
/audit/edit.do	24000	106	44	265	5	4416	0.00%	32.7/sec	164.7
/j_spring_security...	6000	107	41	281	2	3118	0.00%	8.2/sec	26.1
TOTAL	126000	63	22	152	2	4454	0.00%	168.7/sec	794.2

23 Aggregate report of use case 12



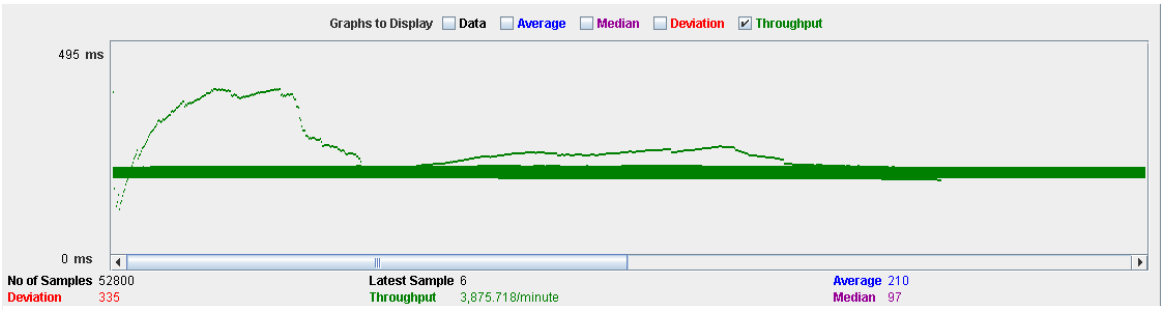
24 Graph results of use case 12

Use Case Test 13

- A user authenticated as a provider edits his personal profile. He also updates and creates an item which then he shows and deletes.
- Number of threads: 60
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/security/login.do	4800	14	9	28	3	474	0.00%	5.9/sec	18.9
/j_spring_security...	4800	279	112	748	8	6032	0.00%	5.9/sec	21.9
/	9600	136	39	360	3	4358	0.00%	11.7/sec	37.9
/actor/personal.do	2400	142	59	366	8	2576	0.00%	3.0/sec	23.2
/actor/edit.do	2400	287	125	748	14	4084	0.00%	3.0/sec	11.1
/j_spring_security...	4800	148	53	380	6	3921	0.00%	5.9/sec	18.8
/item/listPersonall...	9600	253	160	533	30	3780	0.00%	11.8/sec	95.7
/item/update.do	2400	284	175	622	35	3917	0.00%	3.0/sec	12.7
/item/edit.do	2400	470	303	1063	11	4157	0.00%	3.0/sec	26.1
/item/create.do	2400	173	62	433	4	3808	0.00%	3.0/sec	12.5
/item/edit.do.do	2400	449	312	953	45	4584	0.00%	3.0/sec	27.2
/item/show.do	2400	178	82	442	7	4364	0.00%	3.0/sec	12.6
/item/delete.do	2400	214	124	487	25	3058	0.00%	3.0/sec	30.4
TOTAL	52800	210	97	532	3	6032	0.00%	64.6/sec	344.9

25 Aggregate report of use case 13



26 Graph results of use case 13

Use Case Test 14

- A user authenticated as an administrator shows the dashboard.
- Number of threads: 80
- Loop count: 40

Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/	9600	12	8	14	5	960	0.00%	35.4/sec	107.9
/security/login.do	3200	7	6	9	4	390	0.00%	12.1/sec	38.8
/j_spring_security_check	3200	30	15	25	6	1422	0.00%	12.1/sec	39.3
/customisation/administ...	3200	11	9	14	4	868	0.00%	12.1/sec	41.2
/j_spring_security_logout	3200	15	11	17	6	576	0.00%	12.1/sec	38.5
TOTAL	22400	14	9	17	4	1422	0.00%	82.6/sec	261.8

27 Aggregate report of use case 14

28 Graph results of use case 14

Use Case Test 15

- A user authenticated as a provider shows a sponsorship and updates it. Then, he creates a sponsorship and desactivates it.
- Number of threads: 80
- Loop count: 40

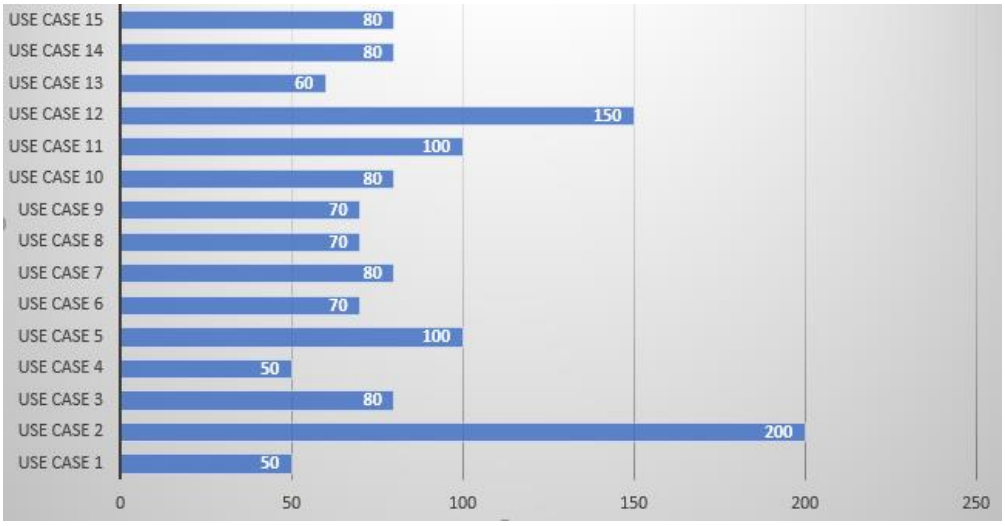
Label	# Samples	Average	Median	90% Line	Min	Max	Error %	Throughput	KB/sec
/	9600	95	9	251	5	3458	0.00%	11.9/sec	41.0
/security/login.do	3200	6	5	7	3	558	0.00%	4.1/sec	13.0
/j_spring_security_check	3200	15	14	19	5	759	0.00%	4.1/sec	13.2
/sponsorship/provider/listSponsorship.do	12800	9	8	11	3	873	0.00%	15.9/sec	54.1
/sponsorship/provider/show.do	3200	9	8	10	5	721	0.00%	4.0/sec	13.8
/sponsorship/provider/update.do	3200	10	8	11	5	637	0.00%	4.0/sec	13.8
/sponsorship/provider/edit.do	6400	9	8	12	3	611	0.00%	8.0/sec	27.4
/position/listPositions.do	3200	12	12	16	8	48	0.00%	4.0/sec	14.9
/sponsorship/provider/create.do	3200	11	8	15	5	822	0.00%	4.0/sec	13.8
/sponsorship/provider/desactive.do	3200	11	8	15	4	530	0.00%	4.0/sec	13.8
/sponsorship/provider/listDesactive.do	3200	9	8	14	4	289	0.00%	4.0/sec	13.8
TOTAL	54400	25	8	18	3	3458	0.00%	67.2/sec	229.1

25 Aggregate report of use case 13

26 Graph results of use case 13

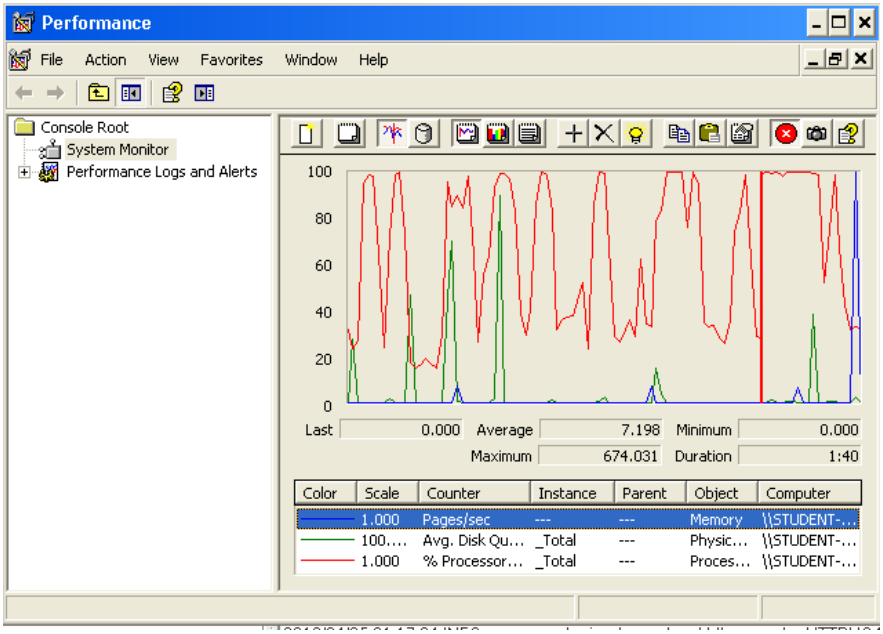
Comparative Graph

✓ Following is a graph with the number of threads (users) for each use case, in a comparative in which it can be deduced that the cases of uses that have a worse performance are 1 and 4.



✓ Therefore, it can be ensured that the system sustains 50 users.

✓ To check that this is the limit, the "Performance" tool offered by Windows XP has been used and has given these results by running the performance test of the use case 1.



✓ We can see that the processor is at the limit of its capacity.