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/*****/
Apache Workbench Statistics for 10 requests and 1 worker:
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Server Software:

Server Hostname: 127.0.0.1

Server Port: 8088

Document Path: /compute

Document Length: 0 bytes

Concurrency Level: 10

Time taken for tests: 286.361 seconds

Complete requests: 10

Failed requests: 0

Total transferred: 720 bytes

HTML transferred: 0 bytes

Requests per second: 0.03 [#/sec] (mean)

Time per request: 286361.167 [ms] (mean)

Time per request: 28636.117 [ms] (mean, across all concurrent requests)

Transfer rate: 0.00 [Kbytes/sec] received

Connection Times (ms)

	min	mean	mean[+/-sd]	median	max
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Connect:	0	0	0.1	0	1
----------	---	---	-----	---	---

Processing:	24587	134536	85518.3	150162	261773
-------------	-------	--------	---------	--------	--------

Waiting:	24584	134536	85518.8	150162	261773
----------	-------	--------	---------	--------	--------

Total:	24588	134537	85518.2	150162	261773
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Percentage of the requests served within a certain time (ms)

50% 150162

66% 181741

75% 204655

80% 234211

90% 261773

95% 261773

98% 261773

99% 261773

100% 261773 (longest request)

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/*****/
Apache Workbench Statistics for 10 requests and 4 workers:
/*****/
```

Server Software:

Server Hostname: 127.0.0.1

Server Port: 8088

Document Path: /compute

Document Length: 0 bytes

Concurrency Level: 10

Time taken for tests: 174.997 seconds

Complete requests: 10

Failed requests: 0

Total transferred: 720 bytes

HTML transferred: 0 bytes

Requests per second: 0.06 [#/sec] (mean)

Time per request: 174996.846 [ms] (mean)

Time per request: 17499.685 [ms] (mean, across all concurrent requests)

Transfer rate: 0.00 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
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Connect:	0	0 0.1	0	1
----------	---	-------	---	---

Processing:	17365	103787	46212.8	140575	157631
-------------	-------	--------	---------	--------	--------

Waiting:	17363	103786	46213.4	140575	157631
----------	-------	--------	---------	--------	--------

Total:	17366	103787	46212.8	140575	157631
--------	-------	--------	---------	--------	--------

Percentage of the requests served within a certain time (ms)

50% 140575

66% 140628

75% 140907

80% 141367

90% 157631

95% 157631

98% 157631

99% 157631

100% 157631 (longest request)

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/*****/
Apache Workbench Statistics for 10 requests and 7 workers:
/*****/
```

Server Software:

Server Hostname: 127.0.0.1

Server Port: 8088

Document Path: /compute

Document Length: 0 bytes

Concurrency Level: 10

Time taken for tests: 304.920 seconds

Complete requests: 10

Failed requests: 0

Total transferred: 720 bytes

HTML transferred: 0 bytes

Requests per second: 0.03 [#/sec] (mean)

Time per request: 304920.321 [ms] (mean)

Time per request: 30492.032 [ms] (mean, across all concurrent requests)

Transfer rate: 0.00 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
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Connect:	0	0 0.2	0	1
----------	---	-------	---	---

Processing:	29046	223445	70253.7	236933	275874
-------------	-------	--------	---------	--------	--------

Waiting:	29043	223445	70254.7	236933	275874
----------	-------	--------	---------	--------	--------

Total:	29046	223446	70253.8	236933	275874
--------	-------	--------	---------	--------	--------

Percentage of the requests served within a certain time (ms)

50% 236933

66% 237470

75% 237768

80% 275544

90% 275874

95% 275874

98% 275874

99% 275874

100% 275874 (longest request)

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/*****/
Apache Workbench Statistics for 10 requests and 10 workers:
/*****/
```

Server Software:

Server Hostname: 127.0.0.1

Server Port: 8088

Document Path: /compute

Document Length: 0 bytes

Concurrency Level: 10

Time taken for tests: 734.624 seconds

Complete requests: 10

Failed requests: 0

Total transferred: 720 bytes

HTML transferred: 0 bytes

Requests per second: 0.01 [#/sec] (mean)

Time per request: 734623.810 [ms] (mean)

Time per request: 73462.381 [ms] (mean, across all concurrent requests)

Transfer rate: 0.00 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
--	-----	-------------	--------	-----

Connect:	0	0 0.1	0	1
----------	---	-------	---	---

Processing:	25723	639316	215597.2	707361	708900
-------------	-------	--------	----------	--------	--------

Waiting:	25720	639316	215598.0	707360	708900
----------	-------	--------	----------	--------	--------

Total:	25723	639316	215597.2	707362	708901
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Percentage of the requests served within a certain time (ms)

50% 707362

66% 707950

75% 708432

80% 708739

90% 708901

95% 708901

98% 708901

99% 708901

100% 708901 (longest request)

/\*\*\*\*\*/
Analysis on individual request processing
/\*\*\*\*\*/

Worker Threads	1	Computation Time:	24
Worker Threads	1	Computation Time:	28
Worker Threads	1	Computation Time:	25
Worker Threads	1	Computation Time:	33
Worker Threads	1	Computation Time:	30
Worker Threads	1	Computation Time:	31
Worker Threads	1	Computation Time:	31
Worker Threads	1	Computation Time:	22
Worker Threads	1	Computation Time:	29
Worker Threads	1	Computation Time:	27
Worker Threads	4	Computation Time:	17
Worker Threads	4	Computation Time:	74
Worker Threads	4	Computation Time:	74
Worker Threads	4	Computation Time:	75
Worker Threads	4	Computation Time:	75
Worker Threads	4	Computation Time:	65
Worker Threads	4	Computation Time:	66
Worker Threads	4	Computation Time:	66
Worker Threads	4	Computation Time:	65
Worker Threads	4	Computation Time:	17

Worker Threads	7	Computation Time:	28
Worker Threads	7	Computation Time:	234
Worker Threads	7	Computation Time:	234
Worker Threads	7	Computation Time:	236
Worker Threads	7	Computation Time:	236
Worker Threads	7	Computation Time:	236
Worker Threads	7	Computation Time:	237
Worker Threads	7	Computation Time:	237
Worker Threads	7	Computation Time:	41
Worker Threads	7	Computation Time:	41
Worker Threads	10	Computation Time:	25
Worker Threads	10	Computation Time:	705
Worker Threads	10	Computation Time:	706
Worker Threads	10	Computation Time:	706
Worker Threads	10	Computation Time:	707
Worker Threads	10	Computation Time:	707
Worker Threads	10	Computation Time:	707
Worker Threads	10	Computation Time:	708
Worker Threads	10	Computation Time:	708
Worker Threads	10	Computation Time:	708

The data for 10 requests sent concurrently at once from Apache workbench with different worker threads indicate that as the number of threads increase from 0 to maxRequests, the

overall processing time first increases and then decreases. This is because the context switching among many worker threads will cause a repeated delay of processing. So an idle number of worker threads should be somewhere at 60%-70% of expected requests.