Write up of ASG3: adding key-value store to multithreaded HTTP server

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Write up questions:

• Why use size_t (64 bits) for parameters, and then only support 32 bit object lengths internally?

64 bits for parameters is to keep consistency to other functions from libraries. Use 32 bit object lengths because we don't need 64 bits. Use 32 other than 64 can save space.

2 ^ 32 = 4294967296

800000 * 4096 = 3276800000 (length of one fvs object with 800000 blocks)

4294967296 > 3276800000

• Perform the following tests twice, once using your code from Assignment 2 and once using Assignment 3:

• Write a simple program or shell script to write 750,000 small objects, each 100 bytes long, to your httpserver. The objects may be empty, or they may be copies of the same data.

• Start httpserver.

• Time how long it takes to complete this task.

• Write up the results, and explain them.

• If it takes too long to complete for either task (about an hour), you may reduce the number of requests. However, you should explain why you were unable to finish in the allotted time.

My HTTP client server cannot finish send 750000 100 byte file within an hour. But I try to send 100 byte file for 200 and 1000 times.

Send 100 byte file

	200 times	1000 times
asg2	About 7s	About 35s
asg3(kvs)	About 5s	About 25s

Asg3 perform better than asg2 because asg3 save time of open files.

Base on the data I get, I need about 437.5 min for asg2 and 312.5 min for asg3 to run send 750000 times for 100 byte file. I cannot finish in the allotted time because I lock too many shared variables and affect performance.

TEST:

All test shell script in test directory pass, include send big file, recv big file, send small file, recv small file, send then recv big file, send tehn recv small file. All shell script run client at least 10 times. Can be consider as multithread.