**Appendix-Redis**

**Environment**

Operating System: Ubuntu 18.04 provided by Amazon Web Service (AWS), each of them have been upgraded to latest on around 17th Apr. via apt update && apt -y dist-upgrade

Redis: standard redis package in Ubuntu registry, version: 5:4.0.9-1ubuntu0.2, installed by apt install -y redis

Yahoo! Cloud Serving Benchmark(YCSB): build af47d643ca7932b9b260c3c081cb44522c99d340 on github, compiled from source with standard default-jre and maven package in Ubuntu registry, installed by

git clone http://github.com/brianfrankcooper/YCSB.git

cd YCSB

mvn -pl site.ycsb:redis-binding -am clean package

Java Runtime Environment (JRE): 2:1.11-68ubuntu1~18.04.1, installed by apt install -y default-jre

Maven project manager: 3.6.0-1~18.04.1

Workload file template: this is a template of workload files used in YCSB. In each test run, there may be minor changes to some properties of it

recordcount=1000

operationcount=1000

workload=site.ycsb.workloads.CoreWorkload

readallfields=true

readproportion=0.5

updateproportion=0.5

scanproportion=0

insertproportion=0

requestdistribution=zipfian

**Steps**

During the test, we firstly change workload file according to each test run, then invoke

./bin/ycsb load redis -s -P workloads/workloada -p "redis.host=127.0.0.1" -p "redis.port=6379" > outputLoad.txt

in 1. Processing Speed Performance test, we change both recordcount and operationcount to 1000/10000/100000 while keeping others same as template

then in 2. Read and Update Performance, we keep recordcount and operationcount as 10000, while changing readproportion to 0.2/0.5/0.8 and updateproportion to 0.8/0.5/0.2 respectively.

In the additional 3. Read and Update Performance, we keep recordcount and operationcount to 100000, while others same as 2

finally, in 4. Performance on different types of Cloud Servers, recordcount, operationcount are both 10000, readproportion and updateproportion are both 0.5, the only changing factor is different AWS EC2 instances types

to load test data into database, then run

./bin/ycsb load redis -s -P workloads/workloada -p "redis.host=127.0.0.1" -p "redis.port=6379" > outputLoad.txt

for testing, test file is in outputLoad.txt and parsed before use in project report