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Evaluation for MongoDB, Cassandra, and CouchDB

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ABSTRACT

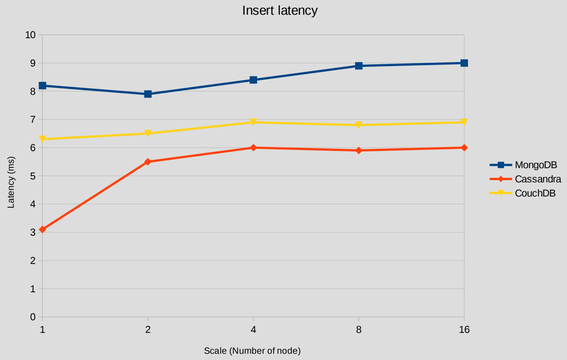
This purpose of this assignment is to evaluate 3 different distributed key/value storage system: MongoDB, Cassandra, and CouchDB.

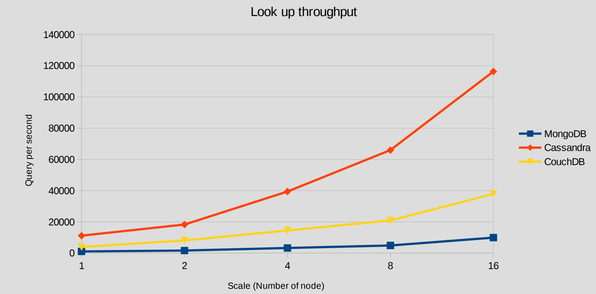
This assignment use AWS as experiment platform and use m3.medium instance. The operating system is Ubuntu 14.04. The program language of client is python.

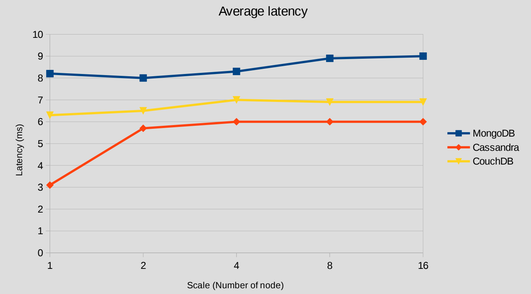
In this assignment, the latency and throughput of 3 systems have been evaluated. For each system, there are 3 basic operations: insert, look up, and remove. In the experiment, this 3 operations need to be tested for the latency and throughput of each operation.

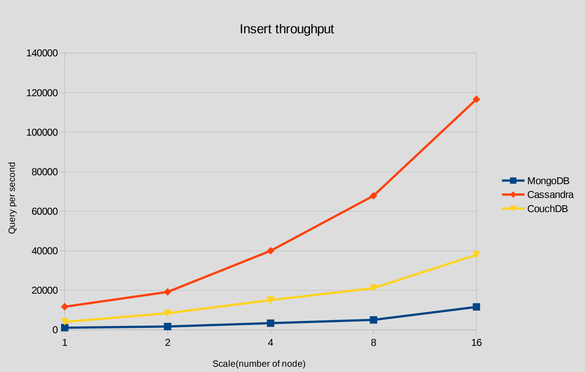
In this evaluation, the scalability of each distributed system is also important. Thus, this assignment test the latency and throughput of 3 operations in different scale. At first, the number of node is 1 and gradually increasing. Finally, the number of node up to 16.

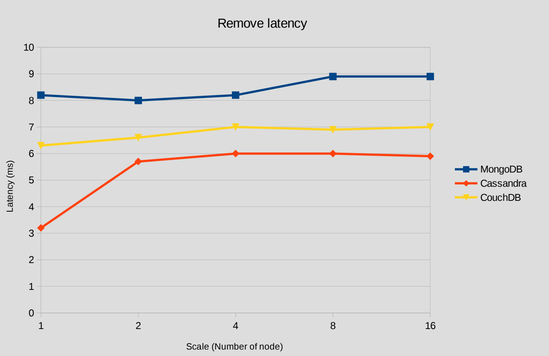
INTRODUCTION

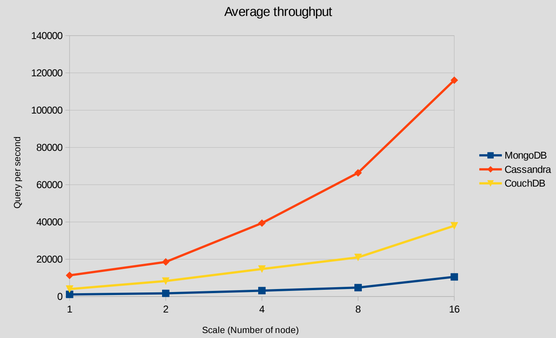


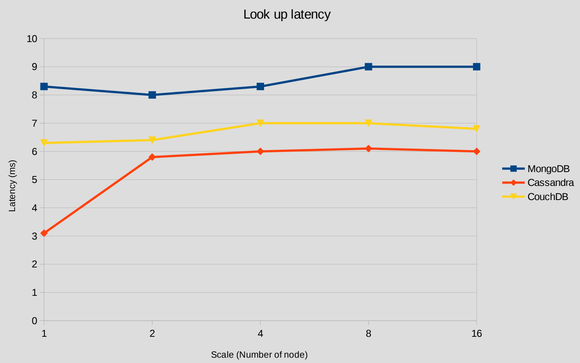


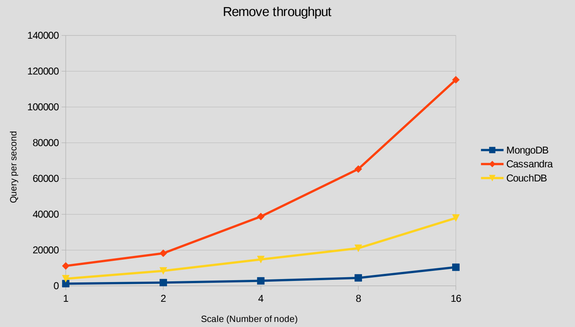












CONCLUSIONS

As the scale increasing, the latency of three distributed system is increasing initially, and then the latency become stable gradually. Thus, the the throughput of distributed system almost is increasing exponentially.

According to experiment, the performance of Cassandra is better than other two distributed system. Additionally, the latency of Cassandra is lower than other two distributed system.