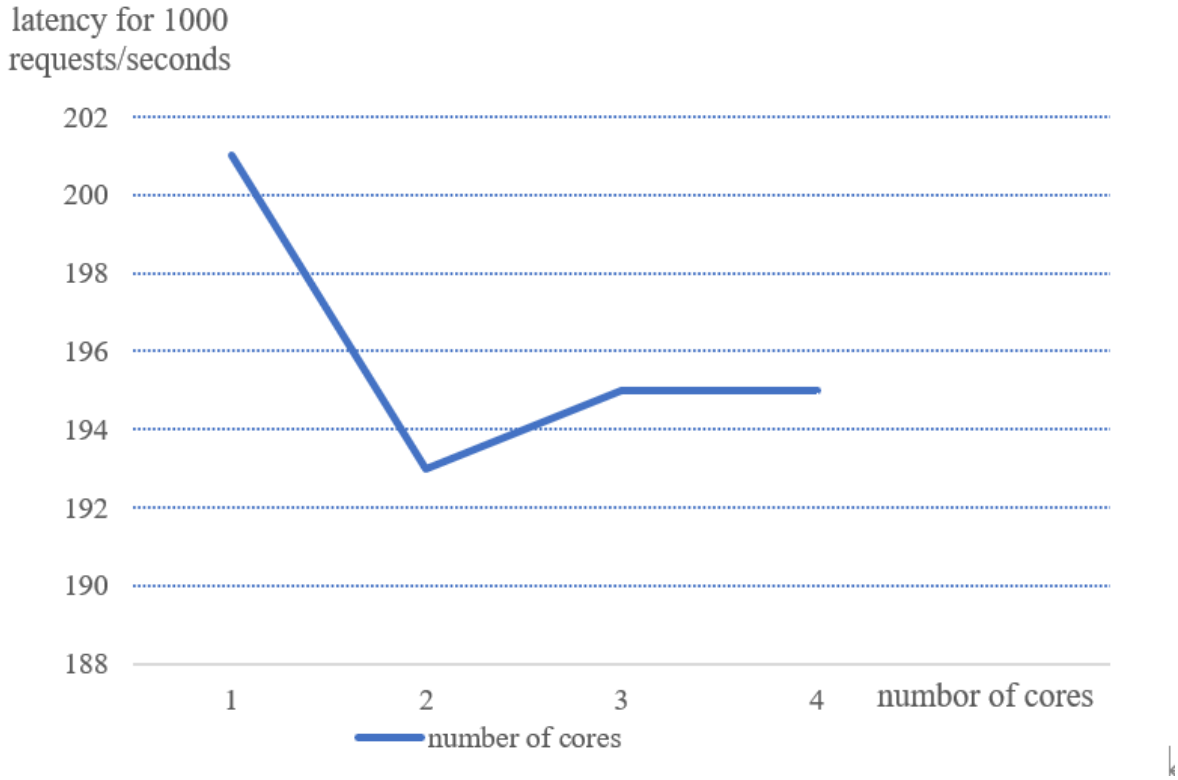
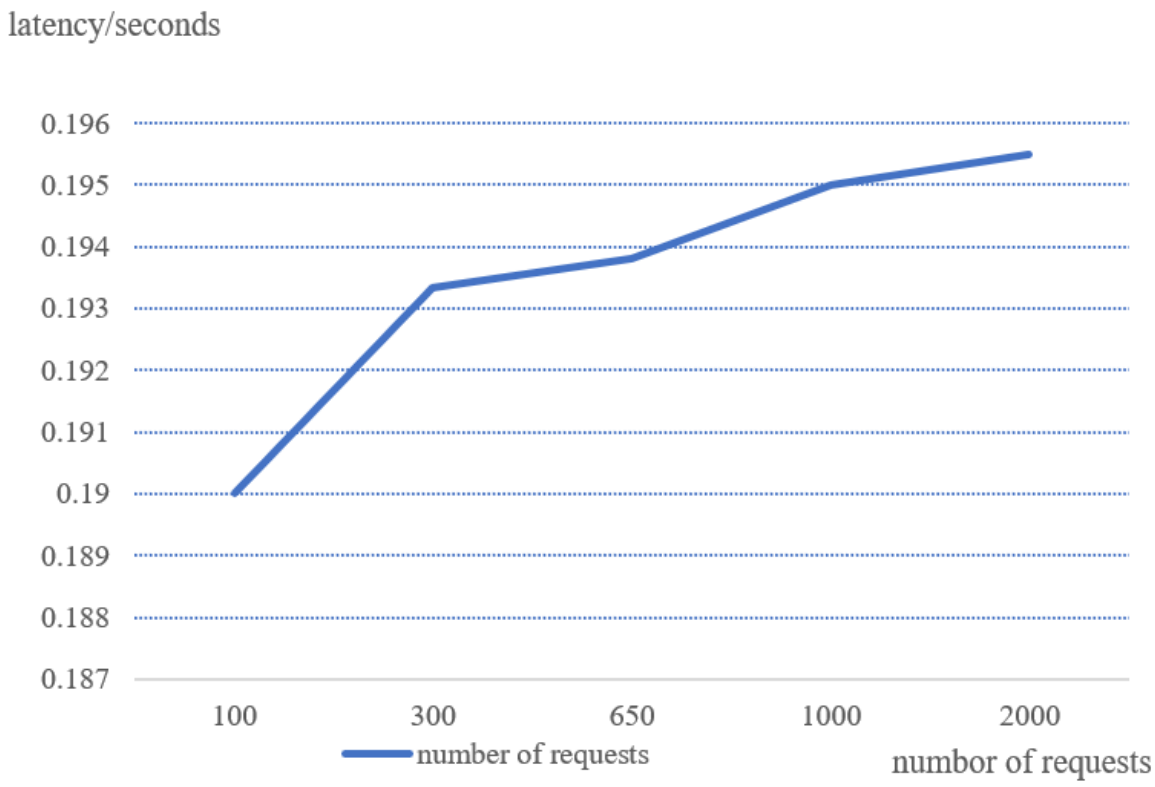
Report

We test two aspects of scalability. Their results and analysis are as below.



First we test latency for 1000 requests with different number of cores. The result is shown as the graph above. We can see that latency decrease when there are 2 cores. It means two cores can improve efficiency of our server, which is as we expected. As number of cores increasing, the latency has lightly increase. The reason may be there are many locks in our implementation. Time to request and release lock from different cores and data movement among multiple cores may increase its latency. Therefore, too many cores may not be able to improve the performance.



At this test, we test the relation between number of requests and average latency for each request . The result is shown as the graph above. As we can see, as the number of requests increasing, latency for each request increases too. It's because server need to use more resource to handle each request as the number of requests growing. Since we use multiple locks to ensure the correctness of operation for database, more requests means we need handle more locks as well as data moving operation, which will increase latency dramatically.