

git-repo-URL: <https://github.com/lyz-sys/neu-cs6650-projects-v2>

Description

The project 2's code is located at `src/main/java/project2`. There are four packages in total one for client, one for server, one for consumer, and one for additional tools. For the server side code, I have `ChannelPool`, `RabbitMQUtil` and `SkierServlet` class. The `ChannelPool` is a data structure that leverages java blocking queue. It was used in `RabbitMQUtil` to manage `Channel` usage so that only fixed amount of `Channel` is created and shared by threads. The `RabbitMQUtil` handle `rmq` related logic including initialization, message sending etc. The `SkierServlet` is the original servlet program used in project 1. In this project, I include more url and json payload validation logic. Additionally, I send corresponding data to `rmq` by using `RabbitMQUtil`. The consumer is implemented in `serverbackendconsumer` folder. It uses `rmq` and multithreading to get message from `rmq` queue and process the info to a map

Metric Results and RMQ Console

metrics with load-balancer

```
17:06:44.590 [main] INFO project2.client.Util - Starting to calculate statistics.
17:06:44.662 [main] INFO project2.client.Util - Successful requests: 200000
17:06:44.663 [main] INFO project2.client.Util - Mean response time: 280ms
17:06:44.663 [main] INFO project2.client.Util - Median response time: 37ms
17:06:44.663 [main] INFO project2.client.Util - Throughput: 613 requests/sec
17:06:44.663 [main] INFO project2.client.Util - p99 response time: 6742ms
17:06:44.663 [main] INFO project2.client.Util - Min response time: 10ms
17:06:44.663 [main] INFO project2.client.Util - Max response time: 32655ms
17:06:44.664 [main] INFO project2.client.Util - Writing to CSV
```

metrics without load-balancer

```
14:32:53.976 [main] INFO project2.client.Util - Starting to calculate statistics.
14:32:54.067 [main] INFO project2.client.Util - Successful requests: 200000
14:32:54.068 [main] INFO project2.client.Util - Mean response time: 352ms
14:32:54.068 [main] INFO project2.client.Util - Median response time: 43ms
14:32:54.068 [main] INFO project2.client.Util - Throughput: 519 requests/sec
14:32:54.068 [main] INFO project2.client.Util - p99 response time: 13141ms
14:32:54.068 [main] INFO project2.client.Util - Min response time: 10ms
14:32:54.068 [main] INFO project2.client.Util - Max response time: 32804ms
14:32:54.068 [main] INFO project2.client.Util - Writing to CSV
```

rmq console profile

