the URL for your git repo.

https://github.com/jerryyummy/distributed\_system\_2

A short description of your data model (5 points) - Please state size of image used if not using the stock image, and also Database/File storage solution.

Size of image:235kb

The object in database includes a primary key named album\_id, blob imagedata, string artist, string title, string year. When I try to save my file to database, I use the code below:

preparedStatement.setBlob(1, new FileInputStream(file));, which can convert imagefile to blob

Output windows for the 3 client configuration tests run against a single server/DB (5 points)

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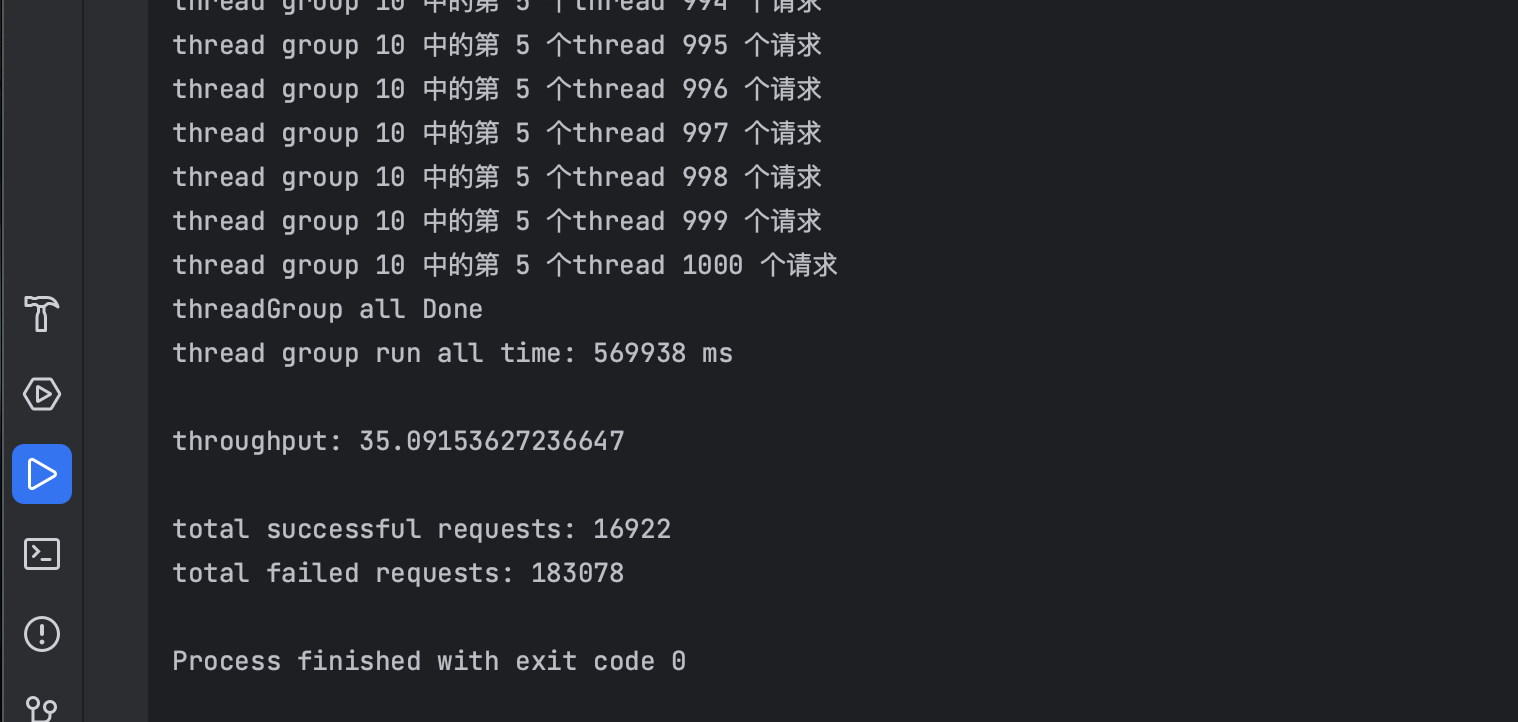
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | time | throughput | mean | 99% time |
| 10,10,2 | 569938 | 350 | 127 ms | 46 ms |
| 10,20,2 | 781610 | 510 | 203 ms | 67 ms |
| 10,30,2 | 1060127 | 560 | 238 ms | 59 ms |

a plot comparing the throughout

Output windows for the 3 client configuration tests run against a two load balanced servers/DB (15 points)

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mean time** | **Median time** | **99% time** | **Min time** | **Max time** | **Wall time** | **throughput** |
| **10 10 2** | **481** | **342** | **70** | **52** | **17592** | **569938** | **350** |
| **10 20 2** | **361** | **238** | **64** | **42** | **4814** | **914329** | **440** |
| **10 30 2** | **423** | **255** | **67** | **46** | **7687** | **1132342** | **530** |

Output window for optimized server configuration for client with 30 Thread Groups. Briefly describe what configuration changes you made and what % throughput improvement you achieved (15 points)

I change the number of max connections in database from 5 to 100, and I add one more instance for testing.

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Wall time is 960989ms, throughput is 625 per second, the total throughput improve about 18%, but the mean response doesn’t improve because we still use one database to write and it will limit the total response time

Other optional but highly recommended to have in your submission:

A screenshot of a computer

Description automatically generated

What database looks like

A graph showing a line

Description automatically generated with medium confidence

A graph showing a line

Description automatically generated

Before optimalization

A screenshot of a computer

Description automatically generated

After optimalization

As we can see , we can decrease the cpu utilization from about 40% to 20%, and the maximum connections in every is about 60, which is less than 70.