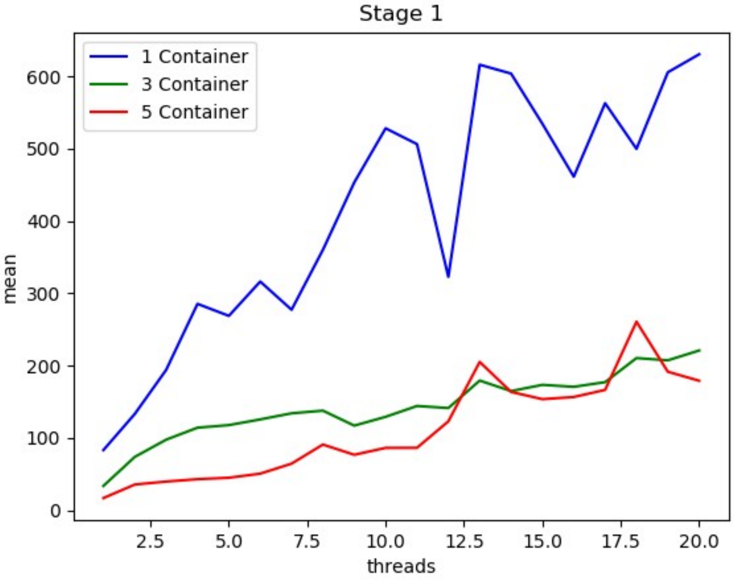
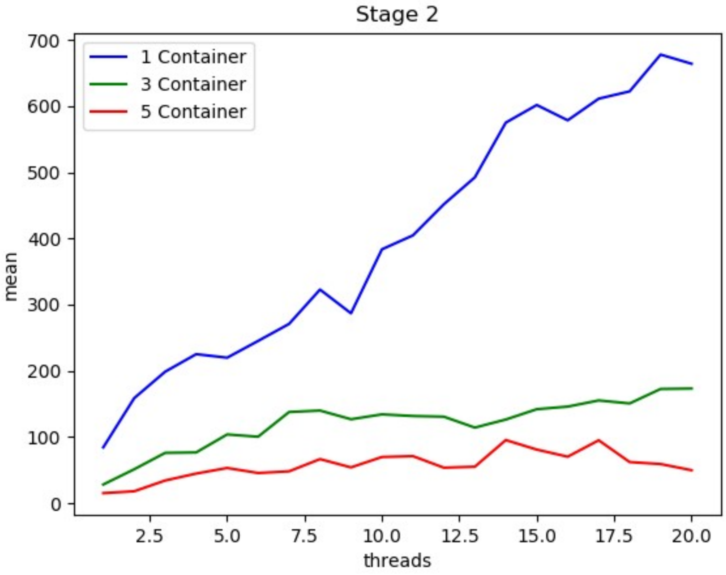
Documentation

Benchmarking:

Outcome:





Discussion:

The first thing we can immediately observe when we look at both graphs, that stage 2 appears a lot more stable. There are fewer break-ins or peaks. Also, stage 2 profits from a lower mean in most cases. Especially the 3 and 5 container lines of stage 2 are either on the same level as their opponents of stage 1 or have a lower mean.

Which makes sense, because stage 2 was containerized with docker-compose. Docker-compose is a tool made for efficient running of multi-container applications, while docker (stage 1) is not. Docker is the predecessor of docker-compose and focuses more on single container applications.

Another thing is that the multiple containers of stage 1 and 2 are faster than the single containers of stage 1 and 2. This has to do with the fact that there are multiple threads involved. The more threads interact, the more a single container is busy, while multiple containers can share the load.

Furthermore, the lines with just 1 and 3 container suffer from a slight overhead due to the load balancer, which assumes that there are always 5 containers. If one container is missing or has failed, the balancer tries the next one. Test have shown that the differences in this case are quite small. Although, the load balancer has the possbility to change the amount of containers easily in the router.js file.

Execution:

Plot graphs:

Execute: *pyhton3 plot.py*

Execute stage 1&2:

The archive doesn’t contain the redis database. The code assumes that the database *redis.rdb* can be found under: */var/cec/*

However, to start stage 1 or 2 just execute: *./execute_stage1.sh* or *./execute_stage2.sh*