**Optimized Job Scheduler for Distributed Systems**

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Introduction

Stage 2 of this project involved the optimisation of the Job Scheduler designed during stage 1. The goal of this stage was to improve upon the turnaround time, resource utilisation and total server cost of our previous iteration of the scheduler. This was to be achieved by implementing a new scheduling algorithm which improved at least one of the above factors.

Problem Definition

To optimise the scheduling of jobs, the resultant outcome must see an improvement through minimised turnaround time, maximised average resource allocation or minimised total server costs. The problem that arises in attempting to achieve this revolves around improving one of the above factors whilst maintaining the efficiency of the other two. As such while considering the three baseline algorithms of FF, BF and WF, the challenge involves managing the impact a new scheduling algorithm will have on all three factors.

Algorithm Description

The new algorithm uses the concept of Best Fit (BF) while improving the resource utilisation by checking for capable servers for jobs.

Implementation Details

The implementation of this concept involves removing the condition for servers to not be in the booting state to accept jobs. This condition prevented potential jobs from being scheduled despite the server being capable of handling the job simultaneously.

Evaluation

Despite the concept seeming promising, my client ran into issues running the test\_results file and as such I was unable to properly test and improve my implementation, with my client also lacking the full implementation of the new algorithm.

Conclusion

The goal to optimise the scheduler was understood however my implementation and testing was not complete to see the results that was expected.

References

Github Project: <https://github.com/rehancjay/COMP3100_Stage2>