VM Selection for Financial Exchanges in the Cloud

Financial exchanges consider a migration to the cloud for scalability, robustness, and cost-efficiency. Jasper presents a scalable and fair multicast solution for cloud-based exchanges, addressing the lack of cloud-native mechanisms for such.

To achieve this, Jasper employs an overlay multicast tree, leveraging clock synchronization, kernel-bypass techniques, and more. However, there are opportunities for enhancement by confronting the issue of inconsistent VM performance within identical instances. LemonDrop tackles this problem, detecting under-performing VMs in a cluster and selecting a subset of VMs optimized for a given application’s latency needs. Yet, we believe that LemonDrop’s approach of using time-expensive all-to-all latency measurements and an optimization routine for the framed Quadratic Assignment Problem (QAP) is overly complex.

The proposed work aims to develop a simpler and scalable heuristic, that achieves reasonably good results within Jasper’s time constraints.

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