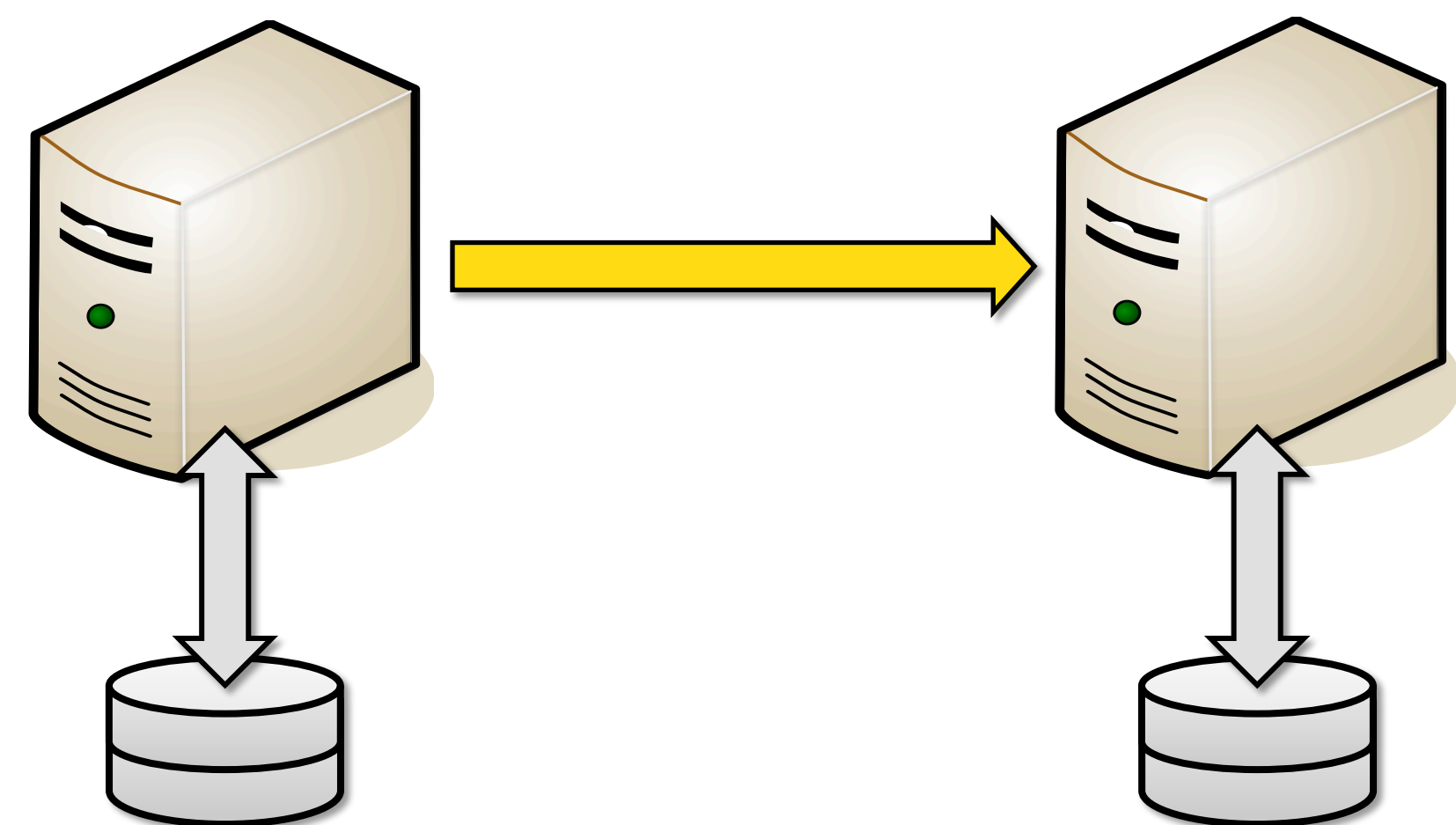


DATABASE HIGH AVAILABILITY USING SHADOW SYSTEMS

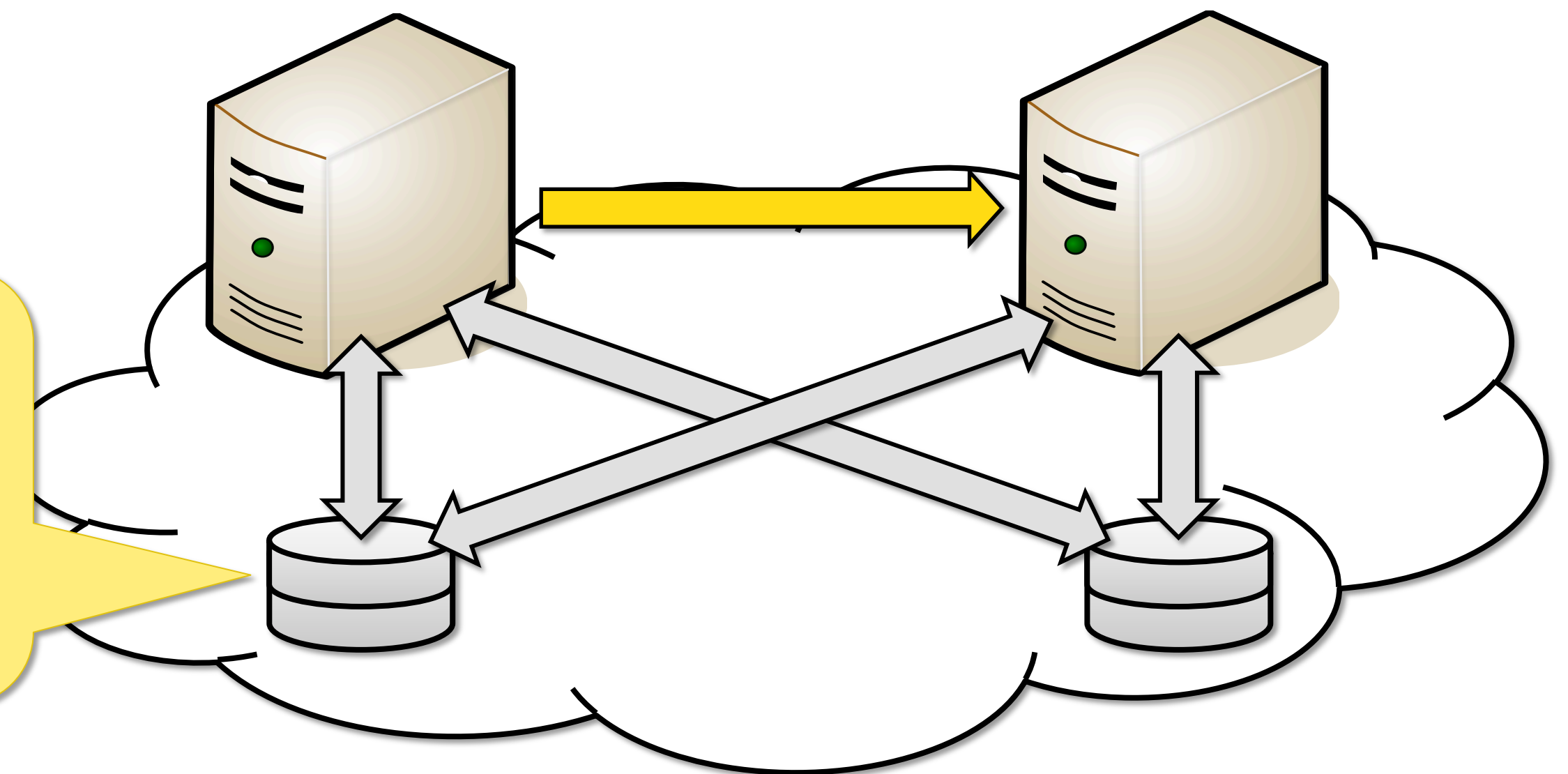
Shared-Nothing High Availability

Typical Active/Standby HA



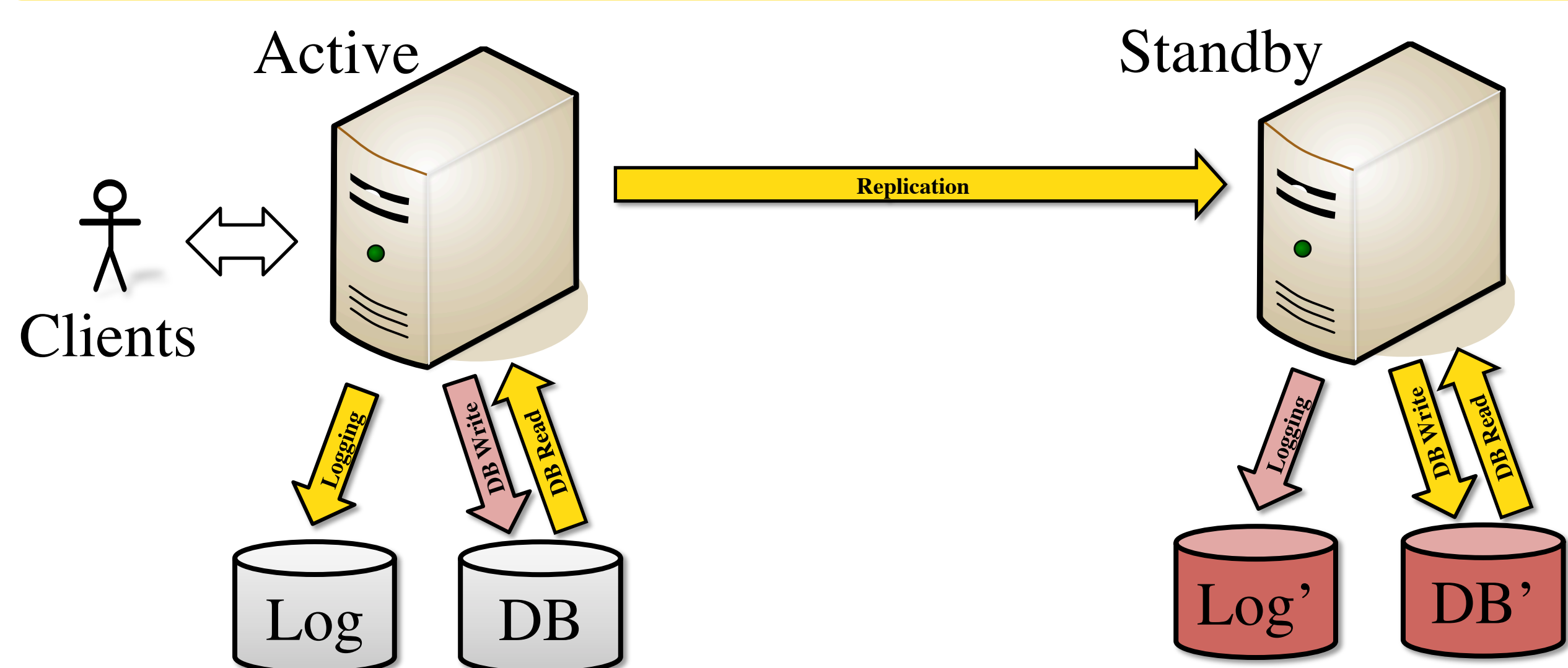
Active/Standby HA in Cloud

How can we exploit shared persistent storage to build better highly available database systems?

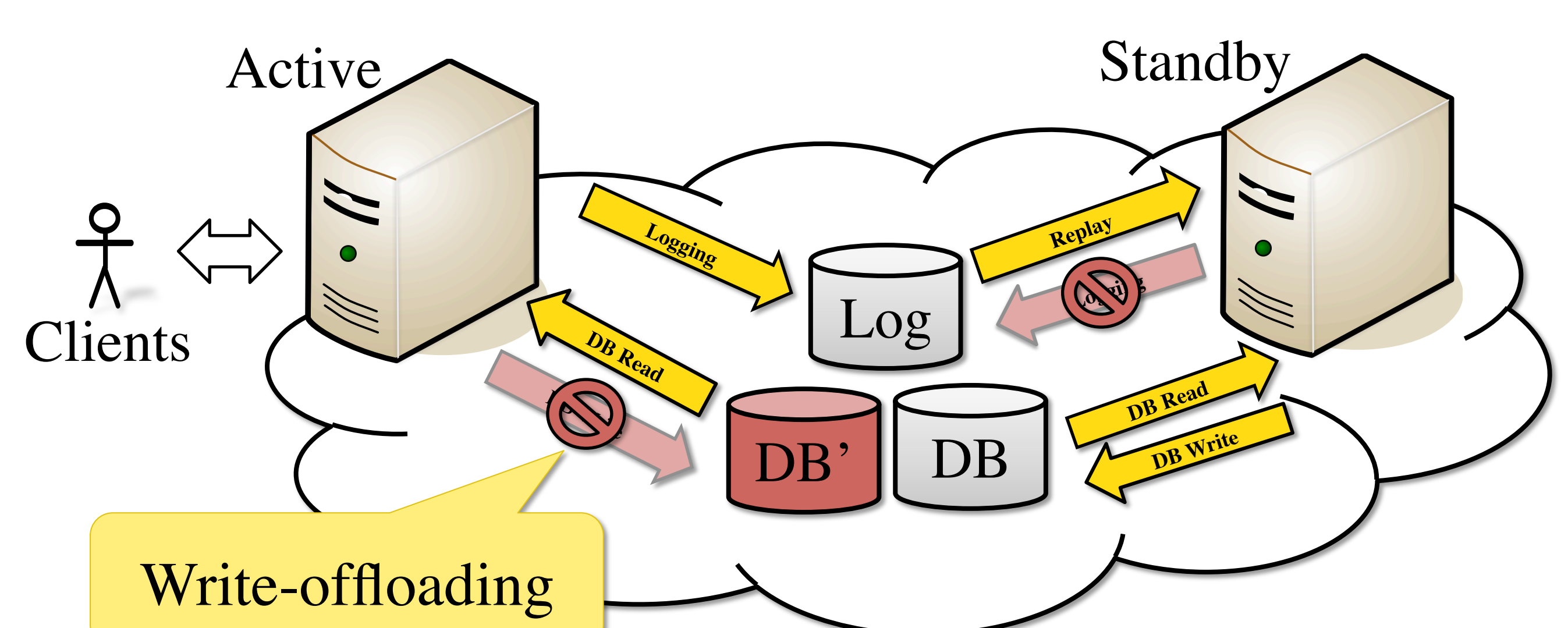


SHARED Database with Offloaded Writes

Traditional Active/Standby

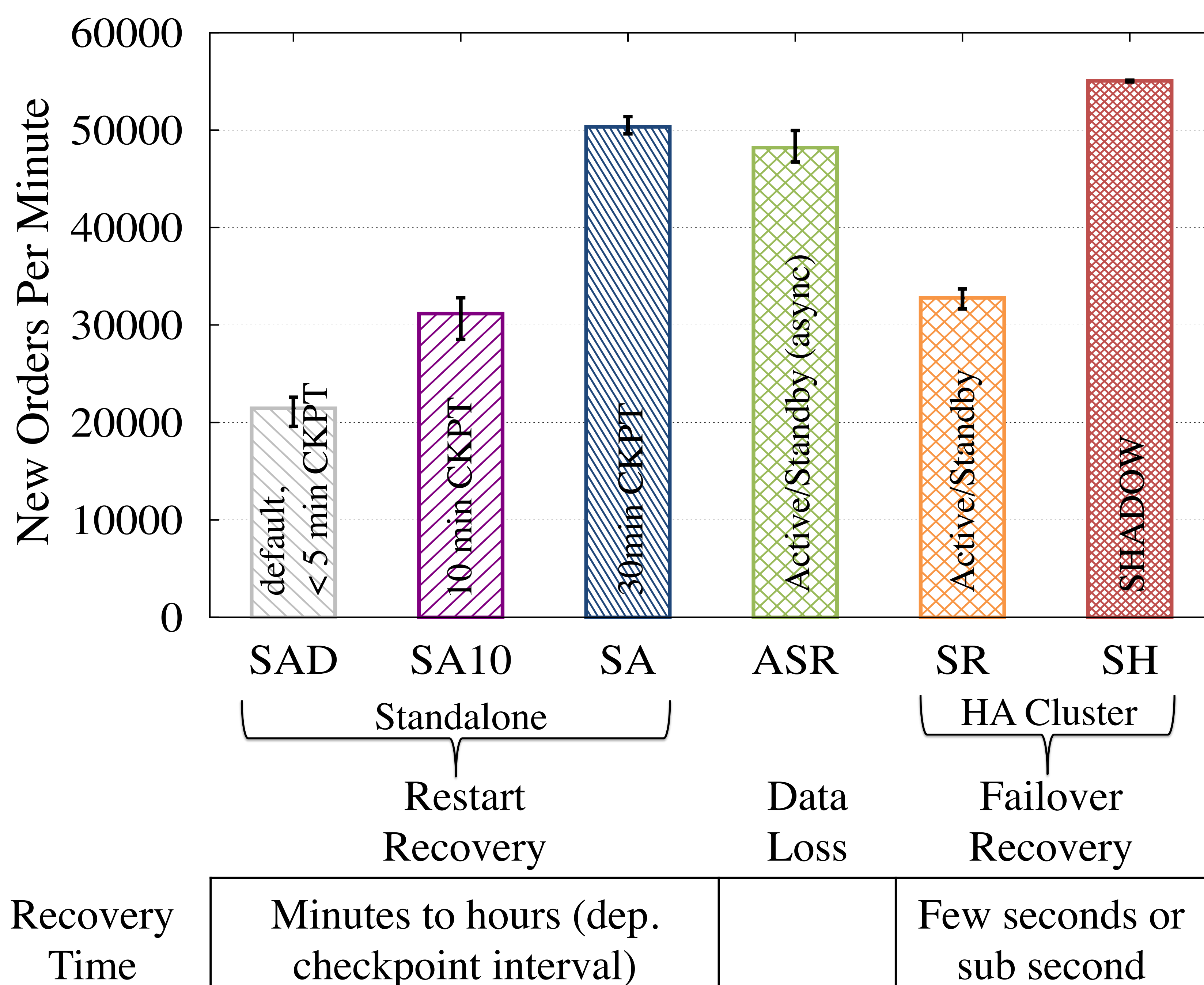


SHADOW Architecture

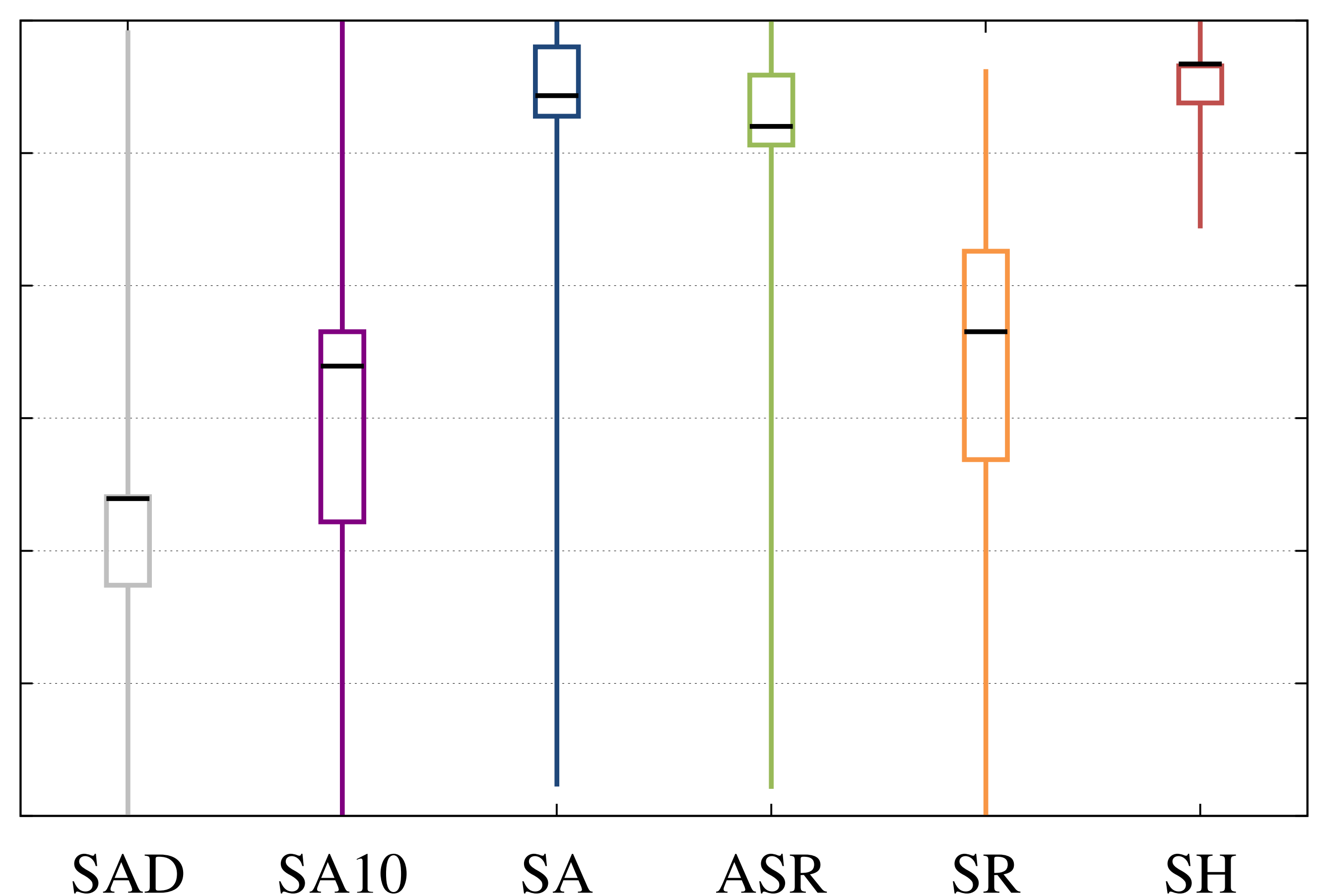


Performance Evaluation

TPC-C Mean Throughput for SHADOW and Baselines



Variability of TPC-C Throughput (1 min intervals)



Amazon EC2 c3.4xlarge instances, 100WH TPC-C workload, database fits in memory (PostgreSQL 9.2, Linux kernel 3.2.0-56)