Performance Report

Assignment -5

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Instances		Avg. Response Time (ms)	Avg. Server Throughput(ops/s)
1	No Failures	177	6.64
	One server fails	178	6.9
	One DB fails except leader	240	5.2
	Leader DB fails	255	5.8
10	No Failures	366	35.45
	One server fails	380	43.6
	One DB fails except leader	405	30.23
	Leader DB fails	421	36.19
100	No Failures	3380	6.48
	One server fails	3450	5.3
	One DB fails except leader		
	Leader DB fails		

- There is actually better throughput as the number of clients increases from 1 to 10. This is because they connect to different seller replicas and in turn the throughput is equally distributed. Also, for trigger detection that something has been returned, we use sleep() function. Therefore, it is expected to have at least some lag in execution of a request.

- However, in the case of 100 clients, due to many parallel requests, there is more overhead in the atomic broadcast protocol (due to more retransmissions and comparisons of global IDs. Therefore, the throughput drastically decreases to one client throughput. Response time also increases a lot.

- Failure of the customer DB server increases the response time, as now the requests are loaded amongst fewer servers. However, there is not too much of a difference between a leader failing (since there is only one cycle of membership protocol). After that, the system operates the same as the case of a non leader failure.