



Ensuring Reliability @ Top Private Bank

Having started operations in mid 90s, the Bank has grown from strength to strength and today has multi-billion assets and market cap, a network of over 1412 branches and 2890 ATMs. Always customer-focused, they wanted to increase customer convenience and so developed an online banking portal.

Prior to going live with the site, the Bank wanted to ensure that its online banking infrastructure would be responsive and more importantly, bear the expected load.

THE PROCESS

QualityKiosk began the testing process by identifying critical modules and the major transactions within each module; especially those with high volumes or data intensive processes. QualityKiosk also defined the user distribution by region and application areas.

QualityKiosk developed detailed scenarios and datasets to test these applications, in addition, QualityKiosk replicated the production infrastructure consisting of:

- Back-end server
- Middle tier machines

QualityKiosk also setup load generation agent boxes and network sniffing devices to get detailed network traffic metrics.

THE SOLUTIONS

QualityKiosk found serious problems with the critical applications:

- **Quick Remit** could not handle more than 350 concurrent users. QualityKiosk recommended code changes that were implemented. It took six major rounds of exploratory test to ensure that the code was optimized to result in CPU utilization of 15% on the application server and 40 on the database server. The application could handle 500 concurrent users at 5000 TPH.
- **Net Banking** was hanging with 150 concurrent users and error messages were observed on the Login page. QualityKiosk recommended code changes and also fine-tuning of certain parameters. After ten major rounds of exploratory tests and different combinations of the application clones, the application finally scaled to 1000 concurrent users at a TPH of 99541
- **Depository** could not handle more than 350 concurrent users. QualityKiosk recommended fine-tuning of some SQL statements. They also further referred the problem to Microsoft who suggested some code fixes. The result was that

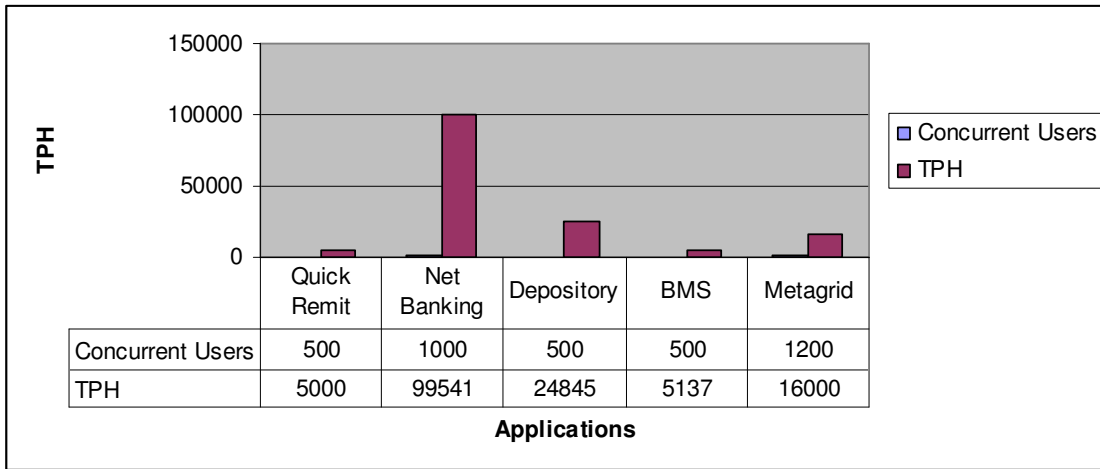
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the CPU Utilization was greatly optimized and the application was able to handle 500 concurrent users generating a TPH of 24845.

- **BMS** crashed with just 20 concurrent users and the CPU saturated at 100% usage. Once again QualityKiosk recommended code changes and after 8 major rounds of exploratory tests the application scaled to 500 concurrent users at a TPH of 5137 and a CPU utilization of 50%.
- **Metagrid** would crash with 250 concurrent users and crashed at 500 concurrent users. After fixing the application as recommended by QualityKiosk, the application could handle 1200 concurrent users at a TPH of 16000.



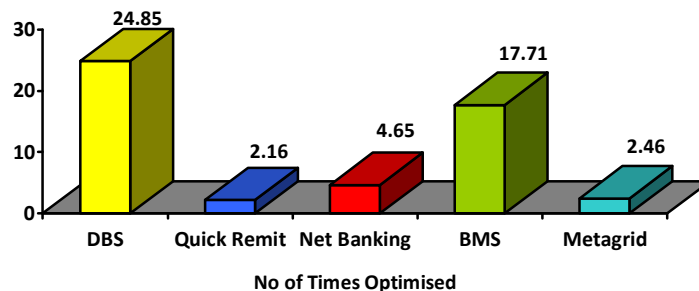
THE BENEFITS

QualityKiosk’s thorough testing and suggested remedial measures ensured that:

- The application met the business goals of peak TPH w.r.t. concurrent users.
- The application offered a maximum response time of 5 seconds at 90th percentile at LAN speed.
- The average CPU utilization for all servers was less than or equal to 75%.

There were no memory leaks.

Scalability



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