VIRTUAL INSTRUMENTS

Multinational Financial Institution

Bank Saves Millions Thanks to a 6-Vendor Flash Storage Bake-Off using WorkloadWisdom

Overview

The IT team at a multi-national financial institution used WorkloadWisdom professional services to help them ensure that they could maintain their performance SLAs with their upcoming storage refresh. In just two weeks, the company chose the flash storage product with the optimal price / performance.

Background and Challenge

The company has historically made provisions every five years for a new high performance storage infrastructure. However with current budgetary constraints and increased knowledge of vendor capabilities this has increased the focus on cost-effectiveness to ensure the best value for money is attained, and all required features are accommodated in a strategic platform minimizing operational costs such as management and monitoring.

The decision was made early in the evaluation cycle to first evaluate flash-based systems, as their current SLAs were not always being met with their existing hybrid arrays.

The current company storage environment utilizes a high availability enterprise class tiered block storage estate supporting the majority of the production storage workload. The arrays offer advanced features for high availability and multi-site resilience. The future architecture requirement will include similar features to protect the company against future environment or building failures at array and site level. So vendors who could not meet those requirements were eliminated early. The short list came down to four vendors.

CASE STUDY

Benefits of accurate workload modeling

- Quickly and accurately performed flash system evaluations.

- Enabled data driven decision on best price / performance tradeoff.

- Ensured that performance SLAs would be met over the life of the new arrays.

The WorkloadWisdom Solution

In late 2015, WorkloadWisdom proposed profiling one of the company's

more performance-intensive Oracle database-based applications and emulating the workloads to help gain a deep perspective of the I/O profile and requirements for their future flash storage infrastructure.

It was determined that the target environment must be scalable for growth over a five year period to ensure that the company is able to efficiently manage the future solution and enable a 10X growth in workload throughput.

This project compared the performance characteristics of the four vendors using the WorkloadWisdom testing methodology in the Flash Storage Testing Methodology whitepaper, the WorkloadWisdom Workload Generation Appliance and WorkloadWisdom Enterprise software.

Results and Analysis

The customer compared the performance of the various arrays for this specific application workload, including the cost proposals from each of the vendors to see the cost/ performance rankings in the table below. The original POC included 6 flash storage vendors, but only 4 vendors were left after the initial cut.

Vendor A clearly dominated the performance specs, but at a price premium. In fact, the customer suspected that the Vendor A solution was "over-spec'd" and this exercise proved it. Vendor D shows the best IOPS and throughput per $ for this workload, but at a higher average latency. And Vendor B appears to strike a good balance, with very good latency.

Summary

The number one value of WorkloadWisdom is that the IT team can make a much more informed decision than would have been able otherwise. The IT team was able to easily, quickly, and accurately evaluate new flash storage systems in a truly apples to apples way, included stress and failure mode testing that enabled them to predict future performance curves. Millions of dollars of savings resulted.

Vendor	Latency Read / Writes (rounded)	Dollars	IOPS (K)	IOPS / Dollars	Throughput (MB/s)	Relative Throughput / K Dollar in MB/s
A	1 ms	$5,900,000	144	.025	15,444	2.6
B	2 ms	$3,200,000	94	.029	10,002	3.1
C	4 ms	$2,700,000	49	.018	5,220	1.9
D	6 ms	$1,300,000	41	.032	4,374	3.4

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Sales
sales@virtualinstruments.com
1.888.522.2557

Training
training@virtualinstruments.com

Website
virtualinstruments.com