Drive Higher Data Center Performance, Reliability, and Manageability with Gen 5 (16Gb) Fibre Channel Solutions and All-flash Storage

This abstract summarizes the driving factors for upgrading from QLogic® 8Gb Fibre Channel (FC) to Gen 5 (16Gb) FC from Cavium™, and presents the most relevant findings from the white paper, "Drive Higher Data Center Performance, Reliability, and Manageability with Gen 5 (16Gb) Fibre Channel Solutions and All-flash Storage."

The time is now to upgrade from 8Gb Fibre Channel to 16Gb Fibre Channel

Enterprise data centers who are striving to manage the increased size and number of applications and databases, while mastering the full potential of high-density server virtualization, cloud architectures and flash storage, will benefit by upgrading now from 8Gb FC (8GFC) to Gen 5 FC.

The time for high-performance FC at 16Gbps FC link speed with advanced SAN management capabilities is today:

- Backward compatibility with existing FC networks means seamless upgrades.
- Rapid deployment tools and technology means 8GFC storage networks can be upgraded to Gen 5 FC effortlessly and seamlessly.
- Deterministic performance means data is available when required for high-performance applications, especially in a flash-based storage environment

Key Findings

- A Gen 5 FC SAN delivers performance and latency requirements to leverage the power of all-flash arrays (AFAs).
- QLogic Enhanced Gen 5 FC adapters from Cavium provide two times the throughput and three times the IOPS over 8GFC adapters.
- Brocade® Gen 5 FC technology accelerates data access for hyper-scale virtualization, larger cloud infrastructures, and growing flash-based storage environments.
- QLogic StorFusion™ from Cavium features automate and simplify SAN deployments to make it easier and faster to upgrade from 8GFC adapters to Gen 5 FC adapters.
- The comprehensive GUI and scriptable CLI in StorFusion technology with Brocade integration improves time efficiencies by 30% as new servers are added.
- The Kaminario® K2 AFA supports scale-out features for linear performance and capacity growth and scale-up features enabling scaling capacity with better density, which could result in reducing the cost per GB.

Deployment and Testing of a Gen 5 FC SAN

Cavium test engineers performed hands-on deployment and testing of QLogic 2690 Series Enhanced Gen 5 FC Adapters with QLogic StorFusion technology in a Brocade Gen 5 FC fabric, connected to a Kaminario K2 AFA.

QLogic 2690 Series Enhanced Gen 5 FC Adapter from Cavium

Brocade 6510 Gen 5 FC Switch

Kaminario K2 AFA

The test configuration was used to demonstrate an FC infrastructure capable of delivering the performance, reliability, and manageability required by today's highly virtualized, cloud-enabled, transaction-intensive and flash storage use cases requiring low-latency and high capacity bandwidth. The K2 AFA connected to the Gen 5 FC SAN was able to provide consistently low latency and high throughput/IOPS, and validated that neither flash storage nor the FC SAN should become a bottleneck during unanticipated periods of peak demand.

Conclusion

FC still reigns supreme when it comes to enterprise-wide storage deployments in which performance, reliability and manageability dictate architectural decisions. Cavium's QLogic Gen 5 FC Adapters with StorFusion features and end-to-end Brocade FC fabric integration, connected to a Kaminario K2 AFA, is a strong choice for any enterprise IT group supporting virtualized servers, cloud architectures and business-critical database workloads.

Click here to download the complete white paper.

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