

ABOUT ATTO TECHNOLOGY, INC.

For 30 years, ATTO Technology, Inc. has been a global leader across the IT and media & entertainment markets, specializing in storage and network connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works with partners to deliver end-to-end solutions to better store, manage and deliver data. Working as an extension of customer's design teams, ATTO manufactures host and RAID adapters, network adapters, storage controllers, Thunderbolt™ adapters, and software. ATTO solutions provide a high level of connectivity to all storage interfaces, including Fibre Channel, SAS/SATA, iSCSI, Ethernet, NVMe, NVMe over Fabrics and Thunderbolt. ATTO is the Power Behind the Storage.

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ABOUT KAMINARIO

Kaminario solutions enable organizations to succeed in today's on-demand world and prepares them to seamlessly handle tomorrow's innovations. Only the Kaminario K2 all-flash array delivers the agility, scalability, performance and economics a data center requires to deal with today's cloud-first, dynamic world and provide real-time data access — anywhere, anytime. Hundreds of customers rely on Kaminario K2 to power their mission critical applications and safeguard their digital ecosystem.

Kaminario is headquartered in Needham, Massachusetts, with offices in Israel, London, Seoul and New York City. www.kaminario.com

ATTO and Kaminario streamline Media and Entertainment Workflows

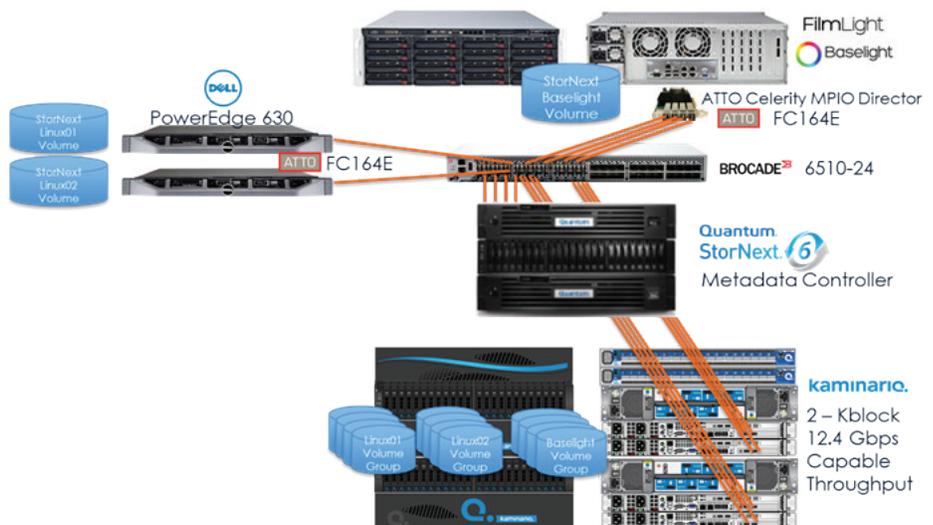
REDUCE TIME SPENT RENDERING WITH THE KAMINARIO K2 ALL-FLASH ARRAY

CHALLENGE

As media & entertainment continues digitizing media, the demand for higher definition, wider color gamut with higher dynamic range, and higher frame rates continues to drive pressure onto IT staff to deliver more, faster. Additionally, external demands for delivering multiple versions for localization, 3D, and multiple formats for online service streaming mean that delivering on time and within budget is of paramount importance.

Traditional high-definition workflows on legacy storage media worked for small projects, but higher performance tasks grew inefficient due to media frames requiring sequential layout on the mechanical drives. Even with the advent of solid state storage arrays, the architecture design was typically created for high IOPS, and small block workloads.

The Kaminario K2 however, was designed to address the gap, with an adaptive block technology for large block workloads. With Kaminario Solid State Array, the technology addresses high throughput needs and can achieve over 6 GB/s throughput at sub-millisecond latency with each K-Block, allowing visual QC workflow while continuing to perform editing, color grading, and rendering without having to shuffle frame sequences between storage arrays to ensure sequential reads during the visual QC process. The Kaminario K2 architecture flexible scaling architecture allows customers to scale up capacity dynamically, and also allows scaling out performance up to 4 K-Blocks driving up to 25 GB/s throughput in a 4 K-Block system.



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A major transcoding studio in Los Angeles was utilizing Filmlight Baselight for lighting and color grading. Their typical workflow was to cache the sequence into Baselight, perform the visual QC with their customer, then render changes back to the primary storage. The next color grading session had to be scheduled at a later date, as rendering back to primary storage takes several hours, resulting in a delay of the delivery of the multiple versions required. In addition, with 3D and HDR versions, the bandwidth requirements continued to increase along with the storage requirements and time to render.

The customer needed a solution that enabled them to bypass the Baselight cache, streaming directly from primary storage and rendering back to primary storage in a fraction of the time for same-day multiple lighting and color grading sessions with the customer. They required streaming of a 3D feature for visual QC along with other workloads including streaming and rendering simultaneously. The workload requirement was to stream 4.6 GB/s read throughput and 1.6 GB/s write throughput simultaneously.

With the workload demand on the customer eliminating the opportunity to perform an onsite PoC, Kaminario worked with Filmlight to procure a Baselight TWO system, ATTO for 16 Gbps Fiber Channel HBAs, Quantum for StorNext 6 Metadata Controllers and Brocade for a 16 Gbps Fiber Channel switch to build out a lab at one of our Southern California partners to simulate the Baselight stack at the customer's site.

SOLUTION

Together, Kaminario and ATTO Technology, Inc. designed a solution to address the gap in time that teams face when forced to render and stream back to storage, with an adaptive technology for large block workloads.

The Kaminario K2 all-flash array addresses high-throughput needs and can achieve over 6GB/s throughput at sub-millisecond latency with each K-Block. This allows visual QC workflow while continuing to perform editing, color grading, and rendering without having to shuffle frame sequences between storage arrays to ensure sequential reads during the visual QC process.

The Kaminario K2 has a flexible scaling architecture that allows customers to scale up capacity dynamically and also allows scaling out performance up to 4 K-Blocks driving up to 25 GB/s throughput in a 4 K-Block system.

In order to build out a lab in Southern California to simulate the Baselight stack at the customer's site, Kaminario worked with:

- ATTO Celerity™ 16Gb Fibre Channel host bus adapters (HBAs)
- Filmlight Baselight TWO system
- Quantum StorNext 6 Metadata Controllers
- Brocade 16Gb Fibre Channel switch

ATTO Celerity cards enabled the necessary throughput to stream finished projects back to storage without bottlenecks. Backed by 30 years of innovation, ATTO Celerity HBAs combine a feature-rich driver set with a unique hardware design that delivers up to 137% greater throughput, supports 2X the number of commands in flight and features 5X more buffer credits than the competitive HBA allowing for the best I/O performance.

SOLUTION BENEFITS

The Baselight system was set up to stream a 3D, 16-bit color sequence with 73 MB frames, equating to a 3.4 GB/s read throughput requirement. In addition, the Linux01 system simulated another 4K read stream and the Linux02 system simulated a 4K write stream for rendering, generating 5.8 GB/s throughput at a 72%/28% Read/Write ratio.



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During testing, the solution generated 3.4 GB/s read throughput on the Baselight, 800 MB/s read throughput from Linux01 and an additional 1.6 GB/s write throughput from Linux02 for a total of 5.8 GB/s throughput at a read/write profile of 72% reads and 28% writes. From the K2 performance tab, we can see the read/write ratio, throughput and latency. With this workload, the setup achieved the requisite throughput at one millisecond of latency on the K2.

ATTO PRODUCT

ATTO Celerity™ 32Gb, 16Gb, and 8Gb Fibre Channel Host Bus Adapters (HBAs) are available in single-, dual- and quad- port configurations and feature proprietary Multipath Director™ and Advanced Data Streaming (ADS™) latency management technologies for the fastest, most reliable connection of servers and workstations to storage in physical and virtual environments. Celerity HBAs are compatible with all leading operating systems and third-party hardware and are complimented by a full suite of easy-to-use, GUI-based diagnostic, monitoring and management tools to ensure optimal performance.

FUTURE IMPACTS

Reducing the delay associated with lighting and color grading solutions for post-production houses means that turnaround time is reduced and deadlines can be met. This is especially important for small production houses who use every minute judiciously and can't account for several hours of rendering when there's so much to do. The solution from ATTO and Kaminario allows post-production units of all sizes to plan projects with the confidence that they'll meet important deadlines.

CONCLUSION

In this combined solution, ATTO and Kaminario were able to decrease the time and cost of the customer's color grading and lighting workflow by decreasing the time to cache and render for their Visual QC sessions, all while delivering more productivity for their customers during those sessions.