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

A Heterogeneous, Rich Media Solution for Digital Post-Production

Challenge

The increasing volume of digital media – and the shift to higher-density 4K formats – means digital post-production organizations are struggling to meet their customers' demands for more capacity and faster processing. Typically each project must accommodate a plethora of servers and workstations, streaming multiple versions, e.g., different focal lengths, 3D left eye/right eye, and increasingly High Dynamic Range (HDR) 16-bit color palettes. With multiple copies and overprovisioning, some shops use as much as 300TB per project. In addition, workflow streams themselves have gotten more complex: each step, from ingesting different formats to transcoding to delivering masters, requires more digital capacity and processing power.
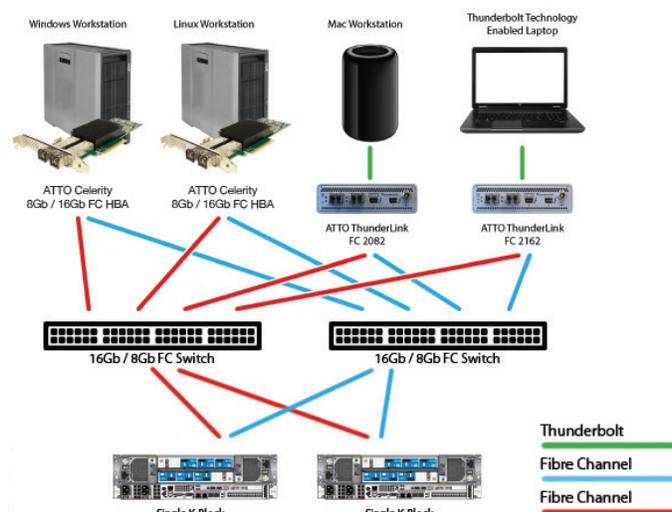
Some companies have tried to solve capacity challenges by over-subscribing storage, adding a new storage array per version or throwing more solid-state drives (SSDs) at legacy architecture. Such an approach is not only expensive and increases complexity, but does not always improve throughput. These solutions can still be "performance bound."

In fact it takes more than "infinite storage." The post-production company with the greatest advantage is the one that can process workflows faster, without losing quality. How do you do this without breaking the bank? Your customer requirements may have increased—but your budget has not.

Solution Benefits

ATTO Technology, Inc. and Kaminario are teaming up to provide a more efficient and cost-effective workflow that increases the revenue per version, as well as increasing the number of versions per month.

The solution provides the ability to connect heterogeneous network including Windows®, Linux®, and Mac® workstations and servers through a high-performance Fibre Channel network to the Kaminario K2 Storage Systems.

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A HETEROGENEOUS, RICH MEDIA SOLUTION FOR DIGITAL POST-PRODUCTION

This provides post-production workflow with a cross- platform, balanced and flexible performance characteristics allowing for reliable support of both random access and sequential access intensive workloads.

Dynamic scheduling of the server-workstation infrastructure, coupled with parallel processing, means more effective use of an editor's talents. These combined benefits enhance post-production companies the ability to monetize their backlog faster. The Kaminario-ATTO solution allows your team to focus on the "create and not the wait" by providing:

- Streamlined 4K workflows on a single LUN without having to copy between storage arrays
- Supports up to eight concurrent 4K, 16bit TIFF image based sequences in 18RU rack servers. Delivers consistent multi-stream 4K playback of up to eight streams without interrupting concurrent processes
- Reduced storage footprint by up to 75% for media workflows. A single copy of media packages eliminates the need for over-subscription of media storage
- 25 GB/s throughput for the most demanding 4K media formats including 16-bit and HDR
- Reduced licensing costs for capacity-based software and eliminates the cost and performance overhead of de-fragging hard disk drive (HDD) storage
- The ability to connect and aggregate heterogeneous Windows®, Linux®, and Mac® workstations into a high-performance Fibre Channel network

FEATURES AND BENEFITS OF KAMINARIO K2 ALL FLASH ARRAY

The K2 all-flash array is an appliance which is a combination of tested and packaged hardware, software and services. K2's Gen 6 hardware platform is based on leading off-the-shelf enterprise components that enable K2's software-defined architecture and software stack. The K2 runs Kaminario VisionOS™, the next-generation flash operating system stack, which provides the core software and advanced data services framework. VisionOS enables modular components and services that demonstrate a superior value proposition across a real scaleout storage platform, both in innovation and in ease of use:

- **DataShrink** – Data reduction features and capabilities are mandatory for economics of flash storage. With differentiating inline, global, adaptive and selective deduplication, together with inline byte-aligned compression, thin provisioning and zero detection, Kaminario is able to establish itself as the cost-efficiency leader of flash storage
- **DataProtect** – Kaminario values its customers' data more than anything. Native array based snapshots and replication allow for returning to any point in time in any site. Data-at-rest AES256 encryption makes sure that data is kept private and safe at all times. A highly resilient design of no single point of failure, non-disruptive upgrades (NDU) and a robust RAID scheme facilitate 99.999% of data availability
- **DataManage** – The K2 can be managed by various means. Internal management includes an intuitive web-based GUI, a scriptable CLI and a fully programmable RESTful API platform
- **DataConnect** – K2's RESTful API allows for external applications of the IT eco-system to easily integrate and seamlessly manage the K2. This eco-system is constantly growing and includes: VMware vSphere®, Microsoft Volume Share Copy Service (VSS), OpenStack®, Flocker (containers) and Cisco UCS® Director.
- Enhance your video and rich media applications with fast, reliable and flexible high-end storage
- Consistent high-performance bandwidth for media-intensive video streaming environments
- Performance tuned solutions provide high-availability access for your pre- and post-production needs
- Enable concurrent file sharing, manage all types of video and media content, including metadata

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A Heterogeneous, Rich Media Solution for Digital Post-Production

Features and Benefits of ATTO Celerity™ Fibre Channel HBAs

ATTO Celerity™ Fibre Channel host bus adapters (HBA) and MultiPath Director™ technology improve the application performance and reliability by uniquely connecting high-performance workstation applications across Windows, Linux and macOS® workstations and servers. This also allows the clients running different applications to collaborate on shared storage providing a heterogeneous solution.

- Concurrent File Sharing requires infrastructure for content developers and video professionals to ingest, produce, process, archive and deliver data with the flexibility to scale performance and capacity ATTO Celerity Fibre Channel HBAs enable you to manage all types of video and media content, including metadata
- Increase performance by enhancing the video and rich-media applications to reliably stream to the fastest, most reliable and flexible high-end storage, as well as connecting with high-performance bandwidth for media-intensive video streaming environments
- ATTO Celerity Fibre Channel HBAs designed to provide heterogeneous support across Windows, Linux and Mac allow multiple clients running different applications to collaborate on shared storage
- ATTO ThunderLink® Thunderbolt™ adapters offering a complete end-to-end, high performance storage area network (SAN) connectivity solution

Future Impacts

The ATTO-Kaminario solution allows teams to focus on the "create" and not the "wait." This means ore teams will be able to develop more content at a faster pace without the hassle of a complicated storage system. These technologies, when paired together, allow for a high-performance media & entertainment solution that works with a multitude of platforms and file types. No matter what an editor is working with, the K2 array will be able to save to the same system as his team.

ATTO Products Supported/Compatible Products

Configuration	
Storage System:	Kaminario K2 (two K-Blocks)
Drives:	48 – SSD
Fibre Channel HBA:	ATTO Celerity 164P quad channel 16-Gb, PCIe3.0 x8 **Driver:** 2.05MP **Flash Bundle:** 2016_06_22
Platform:	HP Z840 with Intel Xeon E5-2620 v3 - 2.40GHz (Dual), 64Gb Memory Nvidea Quadro K4200 graphics, Windows 10
Test System:	AJA System Test v2.1
Setup:	1 KRAID group with 4 LUNs Striped with Windows

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