About ATTO Technology, Inc.

For over 30 years, ATTO 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 bus 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 Western Digital

Western Digital sets the pace for storage innovation and is helping the world harness the power of data. Building on its reputation for producing reliable HDDs, SSDs, and developing tighter integration with software, Western Digital is optimizing storage efficiency and reliability for today's data-centric economy. Founded by the creators of the hard drive, Western Digital serves a broad range of market segments, including enterprise, cloud, OEM, mobile, consumer electronics and personal storage. Western Digital was established in 2003 and maintains its U.S. headquarters in San Jose, California. For more information, please visit www.westerndigital.com.

ATTO and Western Digital

Building Storage Solutions for Performance Demanding Applications

Scientific, medical, engineering and other high-performance environments demand equally high-performance storage. The solution must store a large amount of data. It must also provide speed that pushes the limits of today's solid-state drive devices. At the same time, organizations require a software-defined component that will enable them to build complete storage infrastructures meeting their technical and budgetary requirements.

Expensive flash and hybrid storage arrays — and the last generation of proprietary RAID arrays — typically lack the necessary power to create flexible, high performance storage architectures. But with the advent of software-defined storage (SDS), new possibilities have opened up for assembling high performing, low-cost solutions using storage controllers and off the shelf storage.

Why use an external storage controller?

ATTO Technology, Inc. storage controllers provide the flexibility to use any common SAS JBOD, aggregating up to 240 drives while adding Enterprise Fibre Channel for storage area network connectivity. And since SDS manages features and services, ATTO storage controllers remain agnostic with no proprietary data format written to the attached storage arrays.

With consistent latency measured at under four microseconds, ATTO XstreamCORE® storage controller has the lowest latency of any advertised storage product on the market. It also provides the fastest way to create a shared pool of storage for a large number of servers, each with direct connection for immediate access to data. ATTO storage controllers allow multiple servers to share solid-state drive (SSD) storage at very high rates of speed — up to 1.47 million IOPS. This eliminates the need for each server to have its own high-priced, dedicated, non-sharable SSD or flash storage. And with support for high capacity hard-disk drives (HDDs), they deliver costs savings through improved storage utilization and consolidation.

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Building Storage Solutions for Performance Demanding Applications

Software Defined Storage

Building out a custom storage solution involves adding server-side software that provides many features found in flash, hybrid and conventional storage arrays. Software-defined storage eliminates paying for the same features multiple times and makes software upgrades less painful. Features may include.

- End-to-end checksum protection
- Self-healing
- Copy-on-write
- RAM and SSDs (for caching)
- Block storage support
- Thin-provisioning
- Deduplication and compression
- IP-based replication
- Configuration can include hybrid SSD/HDD, all-SSD and all-HDD
- RAID for large capacity disk drives

Solution Benefits

- Western Digital Ultrastar® HDDs and SSDs with high-performance 12Gb SAS interface maximize the capabilities of ATTO XstreamCORE® storage controller

- Delivers a modular platform to build high-performance computing, clustered and virtualized environments

- The world's fastest storage solution (1.47M IOPS per controller pair, less than four microsecond latency)

- Build your own SSD storage using industry standard JBOD enclosures for a low total cost of ownership (lowest $/GB and $/IOPS)

- Create tiered high-speed SSD and high-performance and capacity HDD solutions that aggregate up to 2.4 PB of storage when using 10 TB drives

- Build out racks of high-capacity hybrid storage by connecting up to 240 SSD or HDD devices

- Use SDS to provide control software and storage features

- Allows for data mobility and redundancy via multisite cluster installations up to hundreds of kilometers apart

- Use of Fibre Channel connected storage eliminates latency and performance limitations of Ethernet

Solution Features
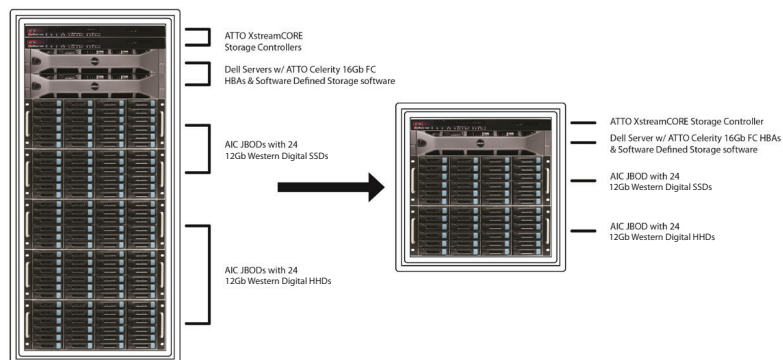
ATTO XstreamCORE®	FC-7500
Performance Capability	1.47M 4K IOPs and 6.4Gb per controller pair
Controller latency	Less than four microseconds
SDD Devices	Western Digital Ultrastar® SSD1600MM 12Gb/s SAS SSD
HDD Devices	Western Digital Ultrastar® C15K600 12Gb/s 15K RPM HDD
Storage Enclosure	AIC J2024-01 12Gb SAS JBOD Enclosures
Server	Dell PowerEdge R630
Hos Bus Adapters	ATTO Celerity ™ 16Gb Fibre Channel, dual port
Storage Protocols	16Gb Fibre Channel 12Gb SAS
Supported Configurations	Single Controller Active/Active in HA pairs managed via software
Control Software	Software Defined Storage
Performance Benchmark	IOmeter

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