ATTO SiliconDisk™ RAM-based Storage Appliance
Extremely Low Latency Storage for 100GbE Enterprise Fabric Architectures

Storage for the Most-Demanding Applications

Next generation NVMe storage and fabric connectivity holds great promise for data center storage, but today’s flash-based arrays introduce too much latency for applications that demand the highest performance.

ATTO SiliconDisk™ changes the way enterprise architects design for the ultimate performance in storage solutions. With just nanosecond latency and Four 100Gb Ethernet ports for 400Gb of bandwidth, SiliconDisk storage blows away current SSD solutions for performance.

With guaranteed latency in a shared ethernet fabric, ATTO SiliconDisk is the next step in the evolution of storage and will change the way your applications store and use data. Data is instantly stored and retrieved with incredible speed letting you edit more streams of video, capture more data instances for AI / ML, manipulate more data sets quicker, and provides incredible performance to index look-ups.

We integrated four channels of ultra-fast 100GbE into a single chip along with our xCORE™ storage controller attached to high speed RAM to eliminate any bottlenecks in performance. This architecture allows us to deliver an incredibly deterministic 600 nanosecond latency with performance of up to 6.4M IOPS and over 35 GBytes/sec sustained bandwidth. Directly connect up to four host servers without a fabric or expand to many using an Ethernet fabric switch to share as part of server cluster architectures.

Unique to ATTO SiliconDisk is our ATTO Insight Analytics™ application. It delivers real-time performance analytics on your storage network connections, storage utilization as well as overall SiliconDisk data performance allowing you to quickly assess issues and optimize your solution. As an embedded feature we integrated sophisticated timing analytics to measure down to nanosecond time-slices in order to give visibility to a level never before seen.

Cut your time troubleshooting storage bottlenecks. Know with certainty application storage utilization. All are critical factors in optimizing storage and getting the most from your systems.

About ATTO
For over 30 years, ATTO Technology, has been a global leader specializing in network and storage 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.
Performance levels are unparalleled with up to 6.4M 4K IOPS and throughput of up to 35 GBytes per second. Access times at 4K block sizes will be deterministic and consistent with a latency of fewer than 600 nanoseconds. Additionally, ATTO SiliconDisk features technology that eliminates the small write penalties or latency gaps often seen on SSD type devices.

Deficiencies in write endurance have made using non-volatile storage solutions in mission critical applications difficult. Device writes per day, or DWPD, is an endurance calculation that NAND flash products use to predict when the device will become unreliable. RAM Memory in ATTO SiliconDisk™ has no “per write” flash performance penalties or worry of memory wear-out.

By moving RAM-level storage data externally to a shared fabric for high availability configurations every node can have easy access to share that data. Should cluster node failures occur, another node can have quick access to that data for better resiliency. System architects can re-imagine their solution to add n-1 performance models using additional nodes for better overall performance. And for composability, ATTO SiliconDisk can be scaled up or down and reassigned on demand.

• ATTO Insight Analytics application provides an embedded AI analytics engine enabling “on the wire” storage performance data to cut support costs with critical troubleshooting information
• Analyze RAM storage usage, controller performance as well as, up through the Ethernet fabric for a complete, unique view of true overall system performance
• Analytics capabilities are hardware-based, allowing users to dig deep without impacting system performance
• No debugging or other specialized tools needed – everything is available to the user via the GUI with no performance penalty
• Unprecedented granularity as well as customized data visualization tools
• ATTO Insight Analytics application is readily available for integration with OEM software

ATTO xCORE™ Data Acceleration

ATTO xCORE hardware-based data acceleration technology features software-free I/O acceleration, handling all reads and writes with almost zero additional processing overhead. The ATTO xCORE Acceleration Processor is enterprise tested with thousands of current installations globally.

The ultra high-performance sharable block storage of ATTO SiliconDisk is not constrained by access to a single server, opening up many possible applications such as:
• Adds a new tier for a Hierarchical Storage Management (HSM) environment
• Exceptionally low latency processing of large, complex databases
• Artificial intelligence (AI) & machine learning (ML) & data mining
• Bridges the gap between composable and virtualized infrastructures
• Creation of high availability server clusters
• Highly responsive Online transaction processing (OLTP)
• Real-time rendering of next generation physics, effects, and other video/image processing
• In-memory databases
• Metadata servers
• Highly reliable and resilient RAID cache
• Additional ultra-high performance storage tier
• High speed distributed project collaboration
• Independent scaling of memory and compute resources

Example Applications

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| Memory Capacity | 512 GB SSDK-0512-000  
1024 GB SSDK-1024-000  
For larger capacities, contact ATTO. |