Build Your Own Private Cloud Storage

XstreamCORE® intelligent Bridge

- Hardware Acceleration bridge
- Over 1.1 million 4K IOPs per controller
- Less than 4 seconds of latency
- Up to 6.4 GB/s throughput
- 32Gb and 16Gb Fibre Channel to 12Gb SAS
- Parallel data processing
- All reads/writes hardware accelerated
- Use with all SSD or SSD/HDD mix
- Add up to 240 SSD or HDD devices
- Input 85-264 VAC, 0.5A (typical), 47-63 Hz

Features

- Ethernet based GUI
- Phone Home
- Patented SMP Mapping
- Read/Write Buffer commands
- Robust Event Logging
- Secure Protocols (future)
- PCIe analyzer
- SNMP, SNTP
- IPv6, IPv4
- Passthrough for self-encrypted drives

Lower TCO

- Use low cost COTS SAS JBOD and JBOF Storage
- Create high density storage
- Integrates with software defined storage (SAS) solutions
- Lower maintenance costs
- Pay as you grow
- Longer useful life
- Plug and play

About ATTO

For over 30 years, ATTO Technology, has been a global leader across the IT and media & entertainment markets, 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.

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### High Performance, Low Latency

XstreamCORE delivers industry-leading performance: over 2.2M 4K IOPS and less than four microseconds latency in a dual-controller configuration. This is enabled by ATTO's exceptionally fast acceleration architecture, which provides dedicated memory modules and data paths for performance-critical commands. With all reads and writes accelerated in hardware, commands don't have to compete for shared system resources, resulting in more data transfers at faster transfer rates.

The XstreamCORE's high throughput and vanishingly low latency has quantifiable cost benefits: When used as a platform to build a storage solution with off the shelf components, $/IOP cost is as low as $.09 per IOP for All-SSD implementations, and an even lower $.05/IOP for SSD/HDD combinations.

### Benefits

- Enables system integrators to build high-performance/high-capacity storage solutions that aggregate up to 240 SAS SSD, HDD or hybrid SSD/HDD devices—up to 1.4PB total
- Optimal platform for database acceleration, analytics and other high-performance applications
- Brings benefits of Fibre Channel SAN technology, including guaranteed data delivery, low latency and server and site clustering to SAS JBOD or JBOF storage
- Modular solution enables easy data migration and software/hardware component upgrades
- High availability configuration adds reliability to storage shared by multiple servers

#### XstreamCORE Performance

<table>
<thead>
<tr>
<th></th>
<th>XstreamCORE w/ SSD</th>
<th>XstreamCORE w/ HDD</th>
<th>Hybrid Storage</th>
<th>All Flash Array</th>
<th>PCIe Flash</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance</strong></td>
<td>1.1M 4K IOPS</td>
<td>1.1M 4K IOPS</td>
<td>10,000s 4K IOPS</td>
<td>1M 4K IOPS</td>
<td>500,000 4K IOPS</td>
</tr>
<tr>
<td><strong>Throughput</strong></td>
<td>6.4 GB/s</td>
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<td>1 – 6GB/s</td>
<td>1 – 12GB/s</td>
<td>Up to 3 GB/s</td>
</tr>
<tr>
<td><strong>Usage</strong></td>
<td>Shared Storage</td>
<td>DAS, Shared</td>
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<td>DAS, Shared</td>
<td>Single Server storage</td>
</tr>
<tr>
<td><strong>Controllers</strong></td>
<td>Dual</td>
<td>Dual</td>
<td>Single Node</td>
<td>Single Node</td>
<td>Single</td>
</tr>
<tr>
<td><strong>Latency</strong></td>
<td>Controller &lt;4 microsecond, Overall solution latency depends on SSDs used</td>
<td>Controller &lt;4 microsecond, Overall solution latency depends on HDDs used</td>
<td>5-10 millisecond</td>
<td>&lt;1 millisecond</td>
<td>100s microseconds</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>As low as $.79/GB</td>
<td>As low as $.09/GB</td>
<td>$3-12/GB</td>
<td>$5-20/GB</td>
<td>$4-10/GB, per server</td>
</tr>
<tr>
<td><strong>Scalability</strong></td>
<td>Up to 480TB (2TB SSDs)</td>
<td>Up to 2.4PB (6TB HDDs)</td>
<td>100s of TB</td>
<td>5-20TB usable</td>
<td>500GB – STB</td>
</tr>
<tr>
<td><strong>Build Your Own</strong></td>
<td>Scale storage, servers as needed</td>
<td>Scale storage, servers as needed</td>
<td>Fixed Configurations</td>
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</tr>
<tr>
<td><strong>Services &amp; Features</strong></td>
<td>In Server</td>
<td>In Server</td>
<td>In Storage</td>
<td>In Storage</td>
<td>In Server</td>
</tr>
</tbody>
</table>

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**Figure 1** - Dual XstreamCORE bridges with 10 shelves of SSD/HDD storage connected to a server via 32Gb Fibre Channel

**Figure 2** - All SSD configuration with a single XstreamCORE bridge achieving up to 1.1M 4K IOPS