



ExpressSAS® H120F

## Key Features

Not all storage adapters are alike. ATTO engineers our products to minimize storage latency giving you the fastest data throughput (both MB/s and IOPs) available for today's most demanding compute environments. Whether you need connectivity for flash storage, direct-attached disks, SAS-based RAID arrays or tape storage, you can trust ATTO's reliable HBA connectivity solutions. Key features include:

- Optimized for extremely low latency - perfect for Flash based storage
- ATTO Advanced Data Streaming (ADS™) Technology for low-latency, smooth data streaming
- Connects easily to disks & tape, JBOD, RAID storage arrays and Flash storage
- ATTO ConfigTool™ tools enables management, monitoring & configuration with an intuitive GUI
- NUMA support for high performance, multiprocessor applications
- Target mode and other driver customization options available

## ATTO PowerCenter Pro™ Integrated Software RAID Solution

### Leveraging Software RAID for Data Protection

For years, storage integrators and end users have relied on ATTO hardware RAID adapters for reliable data protection, increased performance, capacity expansion, as well as enhanced management capabilities.

These same capabilities are now available with ATTO PowerCenter Pro™ integrated RAID software package for 12Gb/s SAS/SATA ATTO ExpressSAS® Host Bus Adapters (HBAs) and ATTO ThunderLink® Thunderbolt™ adapters. PowerCenter Pro is included with ATTO HBAs and adapters at no additional cost.

PowerCenter Pro is a high-performance, cost-effective data protection solution designed for all storage media. With PowerCenter Pro integrated software, users can easily create RAID 0, 1, 1e and 10 groups. Although it can be used with all storage media, PowerCenter Pro is particularly useful for SSD storage, which provides 10x more performance and up to 500x lower latency than traditional hard drives.

ATTO PowerCenter Pro integrated software RAID includes:

- RAID 0, 1, 1e and 10 options included
- Easy-to-use, fully scriptable 'set it and forget it' CLI and EFI interface for RAID group creation, monitoring and management
- Full boot support, as well as support for hot spares

### PowerCenter Pro Advantages

#### Reliable data protection prevents the loss of data due to hardware failures

- PowerCenter Pro quickly restores data and full RAID protection without service interruptions.
- PowerCenter Pro integrated software RAID minimizes rebuild times. RAID users know that SSDs and HDDs will fail at some point. Recovery from these failures is important because data is at risk until the RAID group is fully restored, which can take weeks with hardware RAID because of the complicated nature of parity checking large capacity drives. Software RAID depends on simple data copy operations, which quickly and seamlessly restore RAID groups to a fully protected status.

## About ATTO

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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## Increased performance to support the most demanding workflows

- PowerCenter Pro™ integrated software RAID fully protects data without the parity calculation penalty incurred by hardware RAID controllers. SSDs can experience a 10x performance degradation using hardware RAID while software RAID provides full performance.
- PowerCenter Pro software works hand in hand with ATTO Advanced Data Streaming (ADS™) Technology latency management capabilities. Built into all ExpressSAS and ThunderLink adapters, ADS™ provide controlled acceleration for smooth data streaming, maintaining the highest consistent performance. Working together, ADS and PowerCenter Pro ensure the best-in-industry data transfers for high-bandwidth applications, which means better performance for end-users.

## Capacity Expansions

- Aggregate multiple drives to create a much larger virtual drive that supports large projects.

## Enhanced Management Capabilities

- With PowerCenter Pro, users can manage and monitor performance of all of their storage and RAID groups using a single interface.
- PowerCenter Pro extends drive life. By design, SSDs begin to wear out and fail after a certain number of drive writes. RAID 5 and 6 is especially difficult for SSDs because they require extra writes for parity calculations. PowerCenter Pro maximizes drive life by providing high-performance RAID protection without the parity penalty.

## Hardware RAID Limitation

Traditional hardware RAID controllers have been the go-to solution for SMB data protection for many years. However, these controllers were expensive and, as storage capacities grew to more than 10TB in a single drive, there was a significant risk of data loss during rebuild operations that could stretch for days, or even weeks. Additionally, hardware RAID controllers added unacceptable latency to ultra-fast solid-state storage. Simply put, hardware RAID controllers were not able to keep up with the explosive evolution in storage technology.

To mitigate the limitations of hardware RAID controllers, end users have turned to alternate technologies such as data duplication, and complicated erasure code algorithms. The real answer, however, might be simpler than that – integrated software RAID.

ATTO PowerCenter Pro provides the performance and features of traditional hardware RAID at a fraction of the cost. Easy-to-use, the lightweight PowerCenter Pro software architecture provides the protection, capacity expansion and performance improvements that users are looking for.

