Maximizing Server Efficiency & Elevating Storage Security with HighPoint's NVMe Gen 4 RAID AIC - SSD7580C

The SSD7580C is the latest member of our PCIe Gen4 NVMe RAID AIC product family, and a superset of the 7580 series of high-density U.2/U.3 host controllers.
The SSD7580C's 8 independent device channels are backed by a dedicated PCIe 4.0 x16 host interface, industry leading PCIe switch technology, and our field-proven NVMe RAID stack, and are capable of supporting over 200TB of hot-swappable U.2/U.3 NVMe storage while delivering 28,000MB/s of sustained transfer throughput. The AIC's compact, half-height (low-profile) form factor can be easily installed into nearly any industry standard PC-based server, workstation and rackmount platform running a Linux or Windows based operating system.
The SSD7580C's integrated hot-plug/hot-swap capability streamlines field service, maintenance and upgrade workflows. Administrators can add or remove individual NVMe SSDs, or even an entire RAID array without having to power down the host platform or reboot the operating system. An extensive range of cabling options are available for industry standard rackmount and mobile rack chassis via SFF-8654, SFF-8643, SFF-8611 OCuLink and MCIO 8i connectivity.
SSD7580C AICs provide a high-level of data security for critical applications designed to work with SEDs (self-encrypting disks) that adhere to OPAL SSC TCG specifications. The AIC is the first to employ HighPoint's SafeStorage Hardware Encryption solution, which is ideal for workflows that employ Hot-Swap technology. Customers can rest assured that their data assets will be automatically locked-down anytime a drive is physically removed from the host platform.

True NVMe Hot-Plug & Hot-Swap Support

The SSD7580C's advanced Hot-Plug and Hot-Swap features enhance efficiency and serviceability of professional server and workstation environments by enabling administrators to add or remove individual SSDs and RAID arrays without having to reboot or power down the host computing platform. The AIC creates a "Synthetic Hierarchy" to maintain system stability during PCIe topology changes by employing virtual "placeholders" to ensure each NVMe device channels remain active, and can be replaced by physical disks as needed. In addition, Downstream Port Containment and Read Tracking capability work to ensure the host system continues to operate and perform smoothly whenever an SSD or array is removed. HighPoint's RAID Management Suite provides an Unplug command that facilitates the safe removal of SSDs or arrays by reactivating the virtual placeholder and instructing the host OS to cease any I/O activity to the target device in order to avoid data loss.

HighPoint SafeStorage Secures Data Assets with TCG/OPAL Encryption Technology

NVMe storage and connectivity solutions are frequently deployed to satisfy the stringent performance and reliability requirements of industrial, media and AI applications designed to process large volumes of sensitive data. Securing this data from prying eyes, while protecting the privacy of end user and corporate customers alike is of critical importance.
HighPoint's SafeStorage Hardware Encryption solution was developed to work in conjunction with the state-of-the-art SED technology employed by all classes of modern NVMe media, and is based on the OPAL SSC TCG specifications. It is designed to protect critical assets when physical drives are misplaced or stolen by preventing unauthorized access to stored data. SafeStorage can be applied to both single-disk and RAID configurations, and is activated via a service known as **Disk Security**, which can be administered via our software management and monitoring suites. The solution is complete independent of the host platform; Data encryption is performed at the hardware level, and encryption keys are stored on the device side (the SSD7580C AIC).

Versatile Cabling Solutions Support Industry Mainstream Workstation and Server System Backplanes

The SSD7580C was designed for use with a variety of industry standard backplanes and connectors. We offer a selection of PCIe Gen4 Certified cabling accessories capable of supporting a wide range of storage configurations, including Legacy SFF-8643, and SFF-8654, SFF-8611 OCuLink, and MCIO 8i backplane connectivity, which are based on the SFF-9402 pin definition. This enables the SSD7580C to host any industry standard 2.5" U.2 or U.3 NVMe SSD

via the appropriate cabling/backplane configuration.

Industry Proven NVMe RAID Technology

The SSD7580C will automatically recognize new NVMe SSDS's as single drives- no configuration necessary. In addition, our comprehensive NVMe RAID stack enables each controller to support multiple RAID 0, 1 or 10 arrays, or mixed configurations of arrays and single disks.

RAID 10 (Security & Speed) - RAID 10 requires a minimum of 4 NVMe SSD's and is comprised of a stripe between two RAID 1 arrays. RAID 10 capable of delivering read performance on par with RAID 0, and is superior to RAID 5 for NVMe applications. Unlike RAID 5, RAID 10 doesn't necessitate additional parity related write operations, which reduce the TBW life span of NVMe SSD's.

RAID 0 (Speed)- Also known as a "stripe" array, this mode delivers Maximum Performance, and requires a minimum of 2 NVMe SSD's.

RAID 1 (Security)- This mode creates a hidden duplicate of the target SSD, and requires 2 NVMe SSDs to configure. RAID 1 is ideal for bootable volumes as it enables the system to remain up and running should one of the SSDs fail or stop responding.

Comprehensive RAID & Storage Management and Monitoring Suite

The SSD7580C comprehensive management and monitoring suite enables administrators of any experience level to easily configure and maintain RAID arrays and monitor the status of each individual SSD with a few simple clicks.

***Pre-OS Level Management*:** The UEFI Tool is a command line utility designed for use at the pre-OS level to configure arrays prior to OS installation.

***OS-Level Management*:** The *WebGUI* is an intuitive graphical interface designed to work with modern Web Browsers. It is equipped with Wizard-like menus as well as a suite of advanced tools for expert users. The CLI (Command Line Interface) is ideal for seasoned administrators and platforms that do not utilize graphical operating systems.

SHI (Storage Health Inspector): SHI provides wealth of information about NVMe SSDs, and enables administrators to instantly asses the temperature, TBW/DWPD rating, and operational status of each hosted drive, and configure temperature thresholds to correspond with the target SSD's official specifications.

***1-Click Self Diagnostic Logging Service*:** The WebGUI's Diagnostic tab can instantly gather information about the corresponding hardware, software & storage configurations and compile it into a single file which can be submitted to our Support Department.

Advanced NVMe Cooling Solution Ensures Sustained Gen4 Transfer Performance

The SSD7580C's advanced PCIe Gen4 Cooling Solution enables it to function optimally within the recommended temperature ranges, even under sustained I/O, by combining an anodized aluminum heat sink with an ultra-durable low-decibel fan and a ventilated bracket. The robust, ultra- efficient cooling system rapidly transfers waste-heat away from critical NVMe and PCIe Switch controller componentry, without introducing unwanted distraction into your work environment.

Shipping & Availability

HighPoint's SSD7580C will be shipping in January 2024, and will be available worldwide, direct from our E-Store and our Certified Global Resale and Distribution partners.

E-Store

Where to Buy

SSD7580C 8-Channel PCIe 4.0 x16 U.2/U.3 Hot-Plug/Hot-Swap NVMe RAID AIC – MSRP USD$1499.00: