HighPoint Launches the Industry's fastest External NVMe RAID Storage Enclosures; Powered by Dedicated Host-to-Device PCIe Gen4 x16 Switching Technology!

August 2024, Fremont, CA – HighPoint unveils the RocketStor 654x Series, a new line of external NVMe RAID enclosures designed to elevate Gen4 Storage applications to new heights by effectively packaging uncompromised x16 transfer performance and nearly ½ petabyte of storage capacity into robust, compact external form factor that can be easily integrated into any x86 platform with a free PCIe x16 slot; perfect for industrial and edge computing platforms and professional workstation environments.

Available with 4 or 8 Hot-Swappable, vertically aligned 2.5" drive bays, and powered by our industry proven PCI Switching Architecture and RAID technology, RocketStor 654x series enclosures can deliver up to 28GB/s of transfer bandwidth and support up to eight DC and Enterprise class U.2 and U.3 media configured into as many as four independent RAID 0, 1 or 10 arrays.

The ability to fully optimize x16 lanes of Gen4 upstream or direct CPU bus bandwidth, combined with self-bifurcation (managing and distributing x48 lanes of internal host bandwidth), is a major gamechanger. This advanced architecture enables each RocketStor 654x enclosure to reach its full performance and capacity potential, while allowing for a remarkably compact 4.84" chassis; making them perfect solutions for applications that must rapidly access, transfer and process large volumes of data, such as AI training, M&E post production, and Medical imaging or diagnostic platforms.

Unprecedented Storage Performance

RocketStor 654x enclosures deliver what no other external NVMe storage solutions can; uncompromised, host-to-device PCIe x16 connectivity. Each component has been engineered to maximize the performance and reliability of data transfer; from the compact 8-bay low-profile chassis, to the robust CDFP 400Gbps cabling solution and discreet PCIe x16 adapter card.

The integrated PCIe switching technology enables RocketStor 654x enclosures to maximize data transfer speed by fully utilizing all x16 lanes of PCIe bandwidth provided by the host platform. Both the enclosure (device-side) and PCIe adapter (host-side), are equipped with dedicated PCIe switch ICs.

Dedicated Host-to-Device PCIe Gen4 x16 Switch Architecture

This enables each solution to provide x16 lanes of dedicated PCIe Gen4 upstream bandwidth and x4 lanes of dedicated downstream bandwidth to each U.2 or U.3 SSD. The unique architecture also serves to minimize latency and significantly enhances signal integrity to streamline I/O transmission between the host computer and NVMe storage.

Seamless Scalability & Upgrade Pathways

The external form factor enables administrators to easily expand or upgrade storage capacity for any PC platform with PCIe Gen4 x16 connectivity.

RocketStor 654x series enclosures are particularly well suited for space-constrained industrial and edge computing platforms, as they enable such systems to employ large configurations of enterprise grade 2.5" NVMe media without compromising the compact hardware footprint.

Administrators need only install the discreet low-profile PCIe adapter card into the host platform.

The compact device has been engineered to comply with industry standard tower and rackmount architecture, including platforms that rely on riser cards for PCIe connectivity.
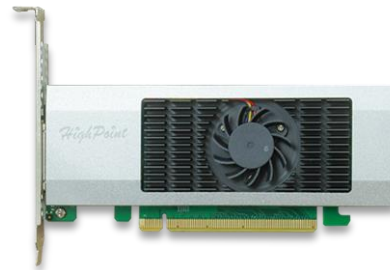
Integrated NVMe Hot-Swap capability and industry standard 2.5" removable drive bays make adding and removing NVMe media a simple task. Individual SSDs and entire RAID configurations to be changed or serviced on the fly without powering down the host platform or rebooting the OS.

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Robust, compact and lightweight construction enable RocketStor 654x enclosures to be moved between different servers or workstations as needed. The discreet PCIe x16 Adapter included with each enclosure is available as an accessory and can be installed into multiple platforms to facilitate collaborative work and data sharing.

Workload Segregation Enhances Efficiency and Serviceability

The external form factor makes it easy to allocate storage to a specific task or application. And thanks to the dedicated PCI switch architecture, resource allotment is all handled outside of the primary computing environment.

Storing or processing data assets via an external NVMe RAID enclosure can optimize platform performance by isolating these workflows from the host hardware environment. The RocketStor 654x's dedicated PCIe switch architecture directly manages all I/O between hosted NVMe, freeing up CPU resources for other critical tasks.

Reduces Power Consumption: HighPoint external NVMe enclosures have dedicated external power supplies to which offset power consumption from the host platform.

Offloads Waste Heat Management from the Host Platform: The external form factor eliminates the need for additional internal 2.5" drive bays and requisite cabling accessories. Not only does this free up considerable interior volume, it can improve the reliability of the entire platform by dramatically reducing power consumption and ensuring that waste heat generated by storage media never enters the computing environment. RocketStor 654x enclosures are equipped with powerful, low-decibel cooling fans engineered to ensure NVMe performs optimally in the most grueling working environments. Full manual fan-control enable administrators to adjust the cooling system based on ambient conditions, including an option to disable the fan for workflows that demand complete silence.

Advanced Gen4 Data Security Suite

RocketStor 654x series RAID enclosures are protected by HighPoint's Gen4 Data Security Suite, which includes SafeStorage, a state-of-the-art data encryption solution for OPAL SSC compliant SED drives and arrays. Stored data is automatically locked down whenever storage is unplugged from the AIC, effectively preventing unauthorized access to sensitive information should physical disks be misplaced or stolen. Integrated Hardware Secure Boot capability prevents unauthorized code, such as a rootkit or ransomware, from executing during the system's boot-up sequence.

Comprehensive NVMe Storage Management and Maintenance Solutions

RocketStor 654x series NVMe RAID Enclosures are compatible with HighPoint's comprehensive NVMe monitoring, and management suite for Windows and Linux. The software solution includes a range of graphical and command line interfaces, for use within and outside of an OS, and enable administrators to easily configure and maintain the platform's NVMe storage ecosystem with a few simple clicks and commands.
Proven RAID technology empowers administrators with the flexibility to tailor unique storage configurations for a wide range of applications, and maximize storage performance with RAID 0 striping, enhance reliability with RAID 1 mirroring technology, or take a balanced approach with RAID 10. A single RocketStor 654x enclosure is capable of hosting up to 4 separate RAID arrays, which will be automatically recognized by the host OS as ordinary, single physical disks, and can even be used to host bootable volumes.

Shipping & Availability

RocketStor 654x series NVMe RAID enclosures will begin shipping in September of 2024, and will be available worldwide direct from our E-Store and our approved Global Resale and Distribution partners. *Where to Buy*

RocketStor 6542AW 8-Bay PCIe 4.0 x16 External NVMe RAID Enclosure MSRP USD$: $2,299.00

RocketStor 6541AW 4-Bay PCIe 4.0 External NVMe RAID Enclosure MSRP USD$: TBA

About HighPoint Technologies, Inc.

HighPoint Technologies stands at the forefront of storage innovation as the industry's -premier manufacturer of high-performance, high-density NVMe Switch and RAID AICs, Adapters and External Enclosures for off-the-shelf x86 AMD and Intel platforms. With a rich history spanning nearly three decades, our dedication to delivering innovative, reliable, and high-performance storage solutions has consistently set us ahead in the marketplace. HighPoint's NVMe storage solutions are powered by industry-proven PCIe Switching technology, and are designed to address the dynamic requirements of AI/ML/LLM applications, Data Centers, Edge Servers, and high-performance workstations, enabling customers to keep pace with today's rapidly evolving technology landscape.