Dell PowerEdge Express Flash NVMe PCIe SSD

A high-performance, PCIe solid-state storage device that enables high IOPS performance, far surpassing that of conventional rotating hard drives.

The Dell™ PowerEdge™ Express Flash NVMe PCIe SSD is a high-performance storage device designed for solutions requiring ultra-low latency, high input/output operations per second (IOPS) and enterprise-class storage reliability and serviceability. The Express Flash NVMe PCIe SSD delivers exceptional performance in demanding enterprise environments, such as blade and enterprise servers, video-on-demand servers, Web accelerators and virtualization workloads. Built with server-grade, multi-level cell (MLC) NAND, the low-latency PowerEdge Express Flash NVMe PCIe SSD provides unmatched throughput, exceptional reliability, serviceability and remarkable power efficiency.   The Express Flash NVMe device is designed to interact with and optimize the high-performance NAND, achieving ultrahigh IOPS and sequential read/write speeds. Engineered for endurance, the PowerEdge Express Flash device can withstand heavy write workloads.

NVM Express (NVMe) is a standardized high-performance host controller interface for PCIe SSDs. Architected from the ground up for non-volatile memory, Express Flash NVMe PCIe SSDs address enterprise system needs. The phenomenal performance of Express Flash NVMe PCIe SSDs extends beyond the hardware. We leverage specialized NAND management technologies to provide robust lifetime wear leveling and data protection.

Breakthrough performance

The Express Flash NVMe PCIe SSD enables IOPS performance that far surpasses conventional rotating hard drives. The Express Flash device is designed to deliver sequential throughput on reads and writes of up to 3.0/1.4 GB/s respectively.

Storage management

Dell storage management applications enable you to manage and configure the Express Flash PCIe SSD subsystem, control and monitor multiple PCIe SSD devices, and provide online maintenance. The Express Flash NVMe PCIe SSD solution supports the unified extensible firmware interface (UEFI) and human interface infrastructure (HII) for pre-operating system management and the Dell OpenManage™ Server Administrator (OMSA) application for operating system management.

Durability

Enterprise-grade MLC NAND and sophisticated NAND-management algorithms delivers 5, 10, 20 and 58 petabytes of drive life for the 400GB, 800GB, 1600GB and 3200GB devices respectively. Also, since NAND SSDs have a finite number of program and erase cycles, Dell warrants the Express Flash PCIe SSD to a maximum amount of data written to the SSD in total bytes written. The SSD monitors these cycles, and Dell software management applications notify you when the warranty limits are reached.

Dell PowerEdge Express Flash NVMe PCIe SSDs deliver exceptional performance in demanding enterprise environments.

Hot swap

Dell PowerEdge Express Flash PCIe SSDs support orderly hot swap, allowing you to add or remove a device without halting or rebooting the system in which the devices are installed. Dell supported PCIe SSD hot-swappable functions include:

- Orderly insertion
- Orderly removal
- Orderly swap

Hot swap feature only supported on 2.5" PCIe SSD.

Device monitoring

The self-monitoring analysis and reporting technology (SMART) feature set minimizes unscheduled system downtimes by providing a method of early detection of device degradation or fault. By monitoring and storing critical performance and calibration parameters, the SMART feature-set attempts to predict degradation or fault conditions. The knowledge of a negative reliability condition allows the host system to warn you of an impending risk of device failure and advise on appropriate action.

Feature	Express Flash NVMe PCIe SSD and PCIe SSC specification
Capacity	400GB, 800GB, 1600GB, 3200GB[1]
Interface	PCIe (3.0-compliant) x4 PCIe 2.0 x4 for PowerEdge 12th generation servers
Sequential read/write	Up to 3.0/1.4 GB/s[2]
Random read/write	700,000+/125,000 IOPS[3] – 400GB/800GB/1600GB 700,000+/175,000 IOPS[3] – 3200GB
Latency	<40us
Active power consumption	25W maximum
Operating systems	Microsoft® Windows Server® 2008 R2 or later, including Hyper-V® virtualization (processor: x64/EM64T) Microsoft Windows Server 2012 Microsoft Windows Server 2012 R2 Red Hat® Enterprise Linux® 6.4 64 bit or later (processor: x64/EM64T) Red Hat Enterprise Linux 7.0 64 bit (processor: x64/EM64T) SUSE® Linux Enterprise Server 11 SP3 64 bit or later (processor: x64/EM64T) SUSE Linux Enterprise Server 12 64 bit (processor: x64/EM64T) Need to update VMware® ESXi™ 5.5 (limited support) VMware ESXi 6.0
Form factor	2.5 inch – 400/800/1600/3200GB HHHL add-in card (Half Height, Half Length) – 3200GB
Dimensions	2.5 inch - 100.50mm x 69.85mm x 14.80mm HHHL add-in card - 167.65mm x 69.85mm x 18.71mm

[1]Unformatted; 1GB = 1 billion bytes; formatted capacity is less
[2]128KB transfer size, steady state
[3]4KB transfer size, steady state

End-to-end technology solutions

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell Enterprise Solutions and Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell Financial Services™ has a wide range of options to make technology acquisition easy and affordable. Contact your Dell Sales Representative for more information.**

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