Dell PowerEdge Express Flash NVMe “Performance” PCIe SSD

This Performance class PCIe solid-state storage device enables high IOPs Performance and high endurance far surpassing that of conventional rotating hard drives.

The Dell™ PowerEdge™ Express Flash NVMe Performance 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 and high endurance 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, this 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.

Breakthrough performance

The Dell PowerEdge Express Flash NVMe “Performance” 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 Seven Drive Writes Per Day (7 DWPD) with 5.1/8.3/16.7 petabytes of “Total Bytes Written” (TBW) drive life for the 400GB/800GB/1.6TB 1st Gen devices (XS1715) and Ten Drive Writes Per Day (10 DWPD) with 14.6/29.2/58.4 petabytes of TBW drive life for the 800GB/1.6TB/3.2TB 2nd Gen devices (SM1715) respectively. 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 TBW. The SSD monitors these cycles, and Dell software management applications notify you when the warranty limits are reached.

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.

Dell PowerEdge Express Flash NVMe “Performance” PCIe SSDs deliver exceptional performance in the most demanding enterprise environments.

Feature	Express Flash NVMe "Performance" PCIe SSD & PCIe SSC specification
Capacity	1st Generation 400GB, 800GB, 1.6TB (XS1715) 2nd Generation 800GB, 1.6TB, 3.2TB1 (SM1715)
Interface	PCIe (Gen3-compliant) x4 *PCIe-Gen2 x4 for 12th generation PowerEdge servers
Sequential read/write	Up to 3.0/1.4 GB/s[2]
Random read/write	700,000+/125,000 IOPs[3] - 400GB/800GB/1.6TB - 1st Gen 700,000+/175,000 IOPs[3] – 800GB/1.6TB/3.2TB - 2nd Gen
Latency	Read 85us[4] – Write 20us[4]
Active power consumption	25W maximum
Supported operating systems	Microsoft® Windows Server® 2008 R2 or later, (x64/EM64T) Microsoft® Windows Server® 2012 (x64/EM64T) Microsoft® Windows Server® 2012 R2 Red Hat® Enterprise Linux® 6.4 or later (x64/EM64T) Red Hat® Enterprise Linux® 7.0 or later Red Hat® Enterprise Linux® 7.2 w/native NVMe Driver SUSE® Linux Enterprise Server 11 SP3 SUSE® Linux Enterprise Server 12 or later SUSE® Linux Enterprise Server 12 SP1 w/native driver VMware ESXi 5.5 (limited support) VMware ESXi 6.0 ***See User's Guide for most up to date OS support.**
Form factor	2.5 inch – 400GB/800GB/1.6TB – 1st Gen 2.5 inch – 800GB/1.6TB/3.2TB – 2nd Gen HHHL (Half Height, Half Length) add-in card – 1.6TB/3.2TB – 2nd Gen
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
[4]4KB transfer size, steady state, QD=1. Read latency captured under sustained Random workload, Write latency captured under sustained Sequential Workload.

Learn more at Dell.com/PowerEdge/ExpressFlash.

FY17Q1_518_datasheet-powerEdge-express-flash-nvmepciessd-pm-1725v3_Spec_Sheet_032816