



Dell PowerEdge Express Flash NVMe “Mixed Use” PCIe SSD

The Dell PowerEdge Express Flash NVMe Mixed Use PCIe SSD is based on the Intel® P4600 product family. Engineered for mixed use workloads, this PowerEdge Express Flash device provides outstanding performance and medium endurance with Three Drive Writes per Day (3 DWPD) and utilizing 3D TLC NAND.

This Mixed Use class PCIe solid-state storage device is designed for solutions requiring high read & write IOPs, ultra-low latency and enterprise-class storage reliability and serviceability. The Express Flash NVMe PCIe-SSD is ideal for demanding mixed use enterprise environments, such as E-Commerce, Seismic Analysis and OLTP Database workloads. Built with server-grade, 3D TLC NAND, the low-latency PowerEdge Express Flash NVMe PCIe SSD can provide unmatched throughput.

The Express Flash NVMe device is designed to optimize the high-performance NAND, achieving ultra-high IOPs and sequential read/write throughput performance.

Breakthrough performance

The Dell PowerEdge Express Flash NVMe “Mixed Use” 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 3.3/2.2 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. These Express Flash Mixed Use devices, based on the Intel P4600 family, are fully integrated with the 14th generation PowerEdge server management tools.¹ The Express Flash NVMe PCIe SSD solution

supports the unified extensible firmware interface (UEFI) and human interface infrastructure (HII), Integrated Remote Access Controller (iDRAC) with Lifecycle Controller and the Dell OpenManage™ Server Administrator (OMSA) application. UEFI and HII support the pre-operating system management, iDRAC delivers agent-free local and remote management and OMSA provides operating system management.

Durability

Enterprise-grade 3D TLC NAND and sophisticated NAND-management algorithms delivers 3 DWPD with 11.49PB & 22.98PB and 14.25PB & 29.21PB of Petabytes Written (PBW) drive life for the 1.6TB & 3.2TB – 2.5” PCIe-SSDs and the 2TB & 4TB Half-Height, Half-Length Add-In-Card (AIC) devices 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 PBW. The SSD monitors these cycles, and Dell software management applications notify you when the warranty limits are reached.²

Dell PowerEdge Express Flash NVMe “Mixed Use” PCIe SSDs deliver great performance in enterprise environments

¹ Intel P4600 lacks full integration with previous generation Dell EMC servers. Device management is handled via Intel Device management tools.

² Learn more at www.Dell.com/poweredge/expressflash

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 functions³ include:

- Orderly or Hot Insertion
- Orderly Removal
- Orderly Swap

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 the appropriate action.

Express Flash NVMe "Mixed Use" PCIe SSD & PCIe SSC specification	
Features	Technical Specification
Capacity	HHHL AIC - 2.0TB ⁴ and 4.0TB ⁴ 2.5" U.2 - 1.6TB ⁴ , 2TB ⁴ and 3.2TB ⁴
Interface	PCIe Gen3 x4
Sequential read/write	HHHL AIC - 2.0TB- 3.35/1.74 GB/s ⁵ 4.0TB- 3.35/2.25 GB/s ⁵ 2.5" U.2 - 1.6TB-2.95/1.45 GB/s ⁵ 3.2TB-2.98/2.15 GB/s ⁵
Random read/write	HHHL AIC - 2TB- 644,000+/184,000+ IOPs ⁶ - R/W 4TB- 695,000+/182,000+ IOPs ⁶ - R/W 2.5" U.2 - 1.6TB- 583,000+/175,000+ IOPs ⁶ - R/W 3.2TB- 690,000+/207,000+ IOPs ⁶ - R/W
Latency	Read 90us ⁷ - Write 30us ⁷
Active power consumption	25W maximum
Supported operating systems	Microsoft® Windows Server® 2016 Red Hat® Enterprise Linux® 7.3 or later SUSE® Linux Enterprise Server 12 SP2 64 bit or later Ubuntu 16.04.03 VMware ESXi 6.0 U3 ESXi 6.5 *See User's Guide for most up to date OS support.
Form factor & Dimensions	2.5 inch - 100.50mm x 69.85mm x 14.80mm HHHL (Half Height, Half Length) add-in card - 167.65mm x 69.85mm x 18.71mm

3 Hot swap features only supported on 2.5" PCIe SSD

4 Unformatted; 1GB = 1 billion bytes; formatted capacity is less

5 128KB transfer size, steady state

6 4KB transfer size, steady state, QD=256

7 4KB transfer size, steady state, QD=1. Read latency captured under sustained Random workload,

Write latency captured under sustained Sequential Workload.

Global services and support

Dell Services can help reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. The Dell Services team takes a holistic view of your needs, and designs solutions for your environment and business objectives while leveraging proven delivery methods, local talent and in-depth domain knowledge for the lowest total cost of ownership.

Learn more at Dell.com/PowerEdge

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