Dell Express Flash P5800X (PCIe Gen4) and P4800X (PCIe Gen3)

Technical Specifications and Information

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Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Dell Express Flash P5800X Specifications and Information

Use these specifications and model-specific information to ensure optimal functioning of your Dell Express Flash P5800X drives.

Table 1. P5800X technical specifications

Features	P5800X
Media type	Second-Generation Intel Optane Memory Media
Capacities	400 GB U.2 800 GB U.2 1600 GB U.2
User-addressable 512-byte sectors	400 GB: 781,422,768 800 GB: 1,562,824,368 1600 GB: 3,125,627,568
Host bus interface	PCIe Gen 4.0 x4
Device protocol	NVM Express 1.3d
TCG support	TCG Storage Security Subsystem Class: Opal Specification Version 2.01 Revision 1.00.
Instant Secure Erase (ISE) support	National Institute for Standards and Technology (NIST) Special Publication 800-88 Revision 1, Guidelines for Media Sanitization.
Bootable device	Yes, UEFI mode only
Hot-swap support	Yes Minimum version of operating system to support hot-swap: • Windows 2019 • Red Hat Enterprise Linux 8.2 • SLES 15 SP2 • Ubuntu 20.4 • ESXi 7.0 (Supported with exceptions, see www.dell.com/virtualizationsolutions for more information.)
Endurance rating (Total Bytes Written (TBW))	• Up to 350 Petabytes Written (PBW) • 400 GB: 60 DWPD, 43.8 PBW • 800 GB: 60 DWPD, 87.6 PBW • 1600 GB: 60 DWPD, 175. 2 PBW
Data retention at maximum rated endurance as per JEDEC requirements	3 months at 40°C
Power	• 12 V and 3.3 V_{aux} supply rails • 25 W active, max • 3.5 W to 5 W idle power

Table 1. P5800X technical specifications (continued)

Features	P5800X
Operating temperature	0°C to 70°C with specified air flow
Physical dimensions (width x length x thickness)	100.45 mm x 70.1 mm x 15.00 mm
Weight	Up to 140 gms
Shock	1,000 G/0.5 milliseconds
Vibration	2.17 Grms, 5 Hz ~ 700 Hz—Operating 3.13 Grms, 5 Hz ~ 800 Hz—Nonoperating
IOPS 4K random reads (16 queue depth; 16 workers)	400 GB: 1,550,000 IOPS 800 GB: 1,550,000 IOPS 1600 GB: 1,550,000 IOPS
IOPS 4K random writes (16 queue depth; 16 workers)	400 GB: 1,150,000 IOPS 800 GB: 1,430,000 IOPS 1600 GB: 1,560,000 IOPS
Latency 4K random read (1 queue depth)	400 GB: 5 µs to 8 µs 800 GB: 5 µs to 8 µs 1600 GB: 5 µs to 8 µs
Latency 4K random write (1 queue depth)	400 GB: 6 µs to 8 µs 800 GB: 6 µs to 8 µs 1600 GB: 6 µs to 8 µs
IOPS 8K random reads (16 queue depth; 16 worker)	400 GB: 835,000 IOPS 800 GB: 835,000 IOPS 1600 GB: 835,000 IOPS
IOPS 8K random writes (16 queue depth; 16 worker)	400 GB: 595,000 IOPS 800 GB: 715,000 IOPS 1600 GB: 805,000 IOPS
Sequential read (128 queue depth; 1 worker)	400 GB: 6,900 MB/s 800 GB: 6,900 MB/s 1600 GB: 6,900 MB/s
Sequential write (128 queue depth; 1 worker)	400 GB: 5,007 MB/s 800 GB: 6,040 MB/s 1600 GB: 6,690 MB/s

Minimum supported operating systems

- Microsoft
  - Windows Server 2019

    - Windows Server 2016
- Linux
    - Red Hat Enterprise Linux 8.0
    - Red Hat Enterprise Linux 7.5
    - SUSE Linux Enterprise Server 15
    - Ubuntu 20.04
    - Ubuntu 18.04
- VMware
    - ESXi 7.0
    - ESXi 6.7

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Dell Express Flash P4800X Specifications and Information

Use these specifications and model-specific information to ensure proper application of your P4800X.

Table 2. P4800X technical specifications

Features	Description
Media type	First-Generation Intel Optane Memory Media
Capacities/form factors	375 GB U.2 375 GB HHHL low profile AIC 750 GB U.2 750 GB HHHL low profile AIC
User-addressable 512-byte sectors	375 GB: 732,585,168 750 GB: 1,465,149,168
Host bus interface	PCIe Gen 3.0 x4
Device protocol	NVM Express 1.0
Bootable device	Yes, U.2 only, UEFI mode only
Hot-swap support	Yes, U.2 only
I/O operations per second	Random 4KB Read: up to 550k Random 4KB Write: up to 550k Random 4KB 70/30 mixed R/W: up to 500k
Endurance rating (total bytes written (TBW))	375 GB: 20.5 PB, 30 DWPD 750 GB: 41.0 PB 30 DWPD
Data retention at end of life	3 months at 40°C
Power	12 V 3.3 V_{aux} supply rail 6 W idle 18 W active
Operating temperature	0°C to 70°C
Physical dimensions	U.2: 100.45 mm x 70.1 mm x 15.0 mm AIC: 68.09 mm x 167.65 mm
Shock	U.2: 1,000 G/0.5 ms, half sine AIC: 50 G, 170 in/s, trapezoidal
Vibration, nonoperating	U.2: 3.13 GRMS, 5 ~ 800 Hz

Table 2. P4800X technical specifications (continued)

Features	Description
	AIC: 3.13 GRMS, 5 ~ 500 Hz

Minimum supported operating systems

NOTE: Supported on all operating systems using the included native drivers.

- Windows Server 2016
- Windows Server 2019
- VMware ESXi 6.5 U2
- VMware ESXi 6.7 U1
- Red Hat Enterprise Linux 7.6
- SUSE Linux Enterprise Server 15
- Ubuntu 18.04.2

NOTE: Cryptographic erase operations are not supported by Dell management tools for P4800X devices. These drives can be securely erased using the Intel SSD Firmware Update Tool.

The Intel SSD Firmware Update Tool should only be used for secure erase of Dell Express Flash P4800X devices. Firmware updates for Dell-branded storage devices are available from Dell.com/support.