Dell Express Flash P5500 and P5600

Technical Specifications and Information

December 2020
Rev. A00

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.

1

Technical Specifications and Information

Use these specifications and model-specific information to ensure optimal functioning of your Dell Express Flash P5500 and P5600 drives.

Table 1. P5500 and P5600 technical specifications

Features	P5500	P5600
Media type	96 layer 3D NAND	96 layer 3D NAND
Capacities	1.92 TB 3.84 TB 7.68 TB	1.6 TB 3.2 TB 6.4 TB
User-addressable 512-byte sectors	1.92 TB: 3,750,748,848 3.84 TB: 7,501,476,528 7.68 TB: 15,002,931,888	1.6 TB: 3,125,627,568 3.2 TB: 6,251,233,968 6.4 TB 12,502,446,768
Host bus interface	PCIe Gen 4.0 x 4	PCIe Gen 4.0 x 4
Device protocol	NVM Express 1.3c	NVM Express 1.3c
TCG support	TCG Storage Security Subsystem Class: Opal Specification Version 2.01 Revision 1.00.	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.	National Institute for Standards and Technology (NIST) Special Publication 800-88 Revision 1, Guidelines for Media Sanitization.
Bootable device	Yes, UEFI mode only	Yes, UEFI mode only
Hot-swap support	Yes Minimum version of OS to support hot-swap: • Windows 2019 and later • RHEL 8.2 • SLES 15 SP2 • Ubuntu 20.4 • ESX 7.0 (Supported with exceptions, see www.dell.com/virtualizationsolutions for more information.)	Yes Minimum versions of OS to support hot-swap: • Windows 2019 and later • RHEL 8.2 • SLES 15 SP2 • Ubuntu 20.4 • ESX 7.0 (Supported with exceptions, see www.dell.com/virtualizationsolutions for more information.)
Endurance rating (TBW) (Warranty period - 5 years)	1.92 TB: 1 DWPD, 3,540 TB 3.84 TB: 1 DWPD, 7,008 TB 7.68 TB: 1 DWPD, 14,016 TB	1.6 TB: 3 DWPD, 8,760 TB 3.2 TB: 3 DWPD, 17,520 TB 6.4 TB: 3 DWPD, 35,040 TB
Data retention at maximum rated endurance as per JEDEC requirements	3 months at 40°C	3 months at 40°C

Table 1. P5500 and P5600 technical specifications (continued)

Features	P5500	P5600
Power	12 V, 3.3 V aux, supply rail 5.0 W idle, typical 25 W active, max	12 V, 3.3 V aux, supply rail 5.0 W idle, typical 25 W active, max
Operating temperature	0 °C–70°C with specified air flow	0 °C–70°C with specified air flow
Physical dimensions (width x length x thickness)	100.45 mm x 69.85 mm x 15.00 mm	100.45 mm x 69.85 mm x 15.00 mm
Weight	146g +/- 15g	146g +/- 15g
Shock	1,000 G/0.5 millisecond	1,000 G/0.5 millisecond
Vibration	2.17 Grms, 5 Hz ~ 700 Hz—Operating 3.13 Grms, 5 Hz ~ 800 Hz—Non-operating	2.17 Grms, 5 Hz ~ 800 Hz—Operating 3.13 Grms, 5 Hz ~ 800 Hz—Non-operating
IOPS 4K random reads (16 queue depth; 16 workers)	1.92 TB: up to 420,000 IOPS 3.84 TB: up to 770,000 IOPS 7.68 TB: up to 990,000 IOPS	1.6 TB : up to 420,000 IOPS 3.2 TB : up to 780,000 IOPS 6.4 TB : up to 990,000 IOPS
IOPS 4K random writes (16 queue depth; 16 workers)	1.92 TB: up to 65,000 IOPS 3.84 TB: up to 130,000 IOPS 7.68 TB: up to 160,000 IOPS	1.6 TB: up to 130,000 IOPS 3.2 TB: up to 260,000 IOPS 6.4 TB: up to 300,000 IOPS
Latency 4K random read (1 queue depth)	1.92 TB: 10 µs to 78 µs 3.84 TB: 10 µs to 78 µs 7.68 TB: 10 µs to 78 µs	1.6 TB: 10 µs to 78 µs 3.2 TB: 9 µs to 78 µs 6.4 TB: 9 µs to 78 µs
Latency 4K random write (1 queue depth)	1.92 TB: 12 µs to 22 µs 3.84 TB: 12 µs to 17 µs 7.68 TB: 12 µs to 15 µs	1.6 TB : 13 µs to 16 µs 3.2 TB : 12 µs to 14 µs 6.4 TB : 12 µs to 14 µs
IOPS 8K random reads (16 queue depth; 16 worker)	1.92 TB: 220,000 IOPS 3.84 TB: 430,000 IOPS 7.68 TB: 590,000 IOPS	1.6 TB: 230,000 IOPS 3.2 TB: 430,000 IOPS 6.4 TB: 600,000 IOPS
IOPS 8K random writes (16 queue depth; 16 worker)	1.92 TB: up to 35,000 IOPS 3.84 TB: up to 65,000 IOPS 7.68 TB: up to 85,000 IOPS	1.6 TB: up to 65,000 IOPS 3.2 TB: up to 135,000 IOPS 6.4 TB: up to 160,000 IOPS
Sequential read (128 queue depth; 1 worker)	1.92 TB: 3.8 GB/s 3.84 TB: 6.7 GB/s 7.68 TB: 6.7 GB/s	1.6 TB: 3.8 GB/s 3.2 TB: 6.7 GB/s 6.4 TB: 6.7 GB/s
Sequential write (128 queue depth; 1 worker)	1.92 TB: 1.9 GB/s 3.84 TB: 3.7 GB/s 7.68 TB: 4.6 GB/s	1.6 TB: 1.8 GB/s 3.2 TB: 3.7 GB/s 6.4 TB: 4.6 GB/s

Minimum supported operating systems

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

- 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
  - Ubuntu 20.04
  - Ubuntu 18.04
- VMware
  - ESXi 7.0
  - ESXi 6.7