



DC5820/E | PCIe NVMe | OCP Cloud Spec 2.0

Advanced Data Center SSD Storage for Telecom/Edge Embedded Switches and Enterprise/File Server

SMART's PCIe Gen5 NVMe SSDs are designed to deliver high performance and optimal power efficiency across a wide range of applications including Telecom/Edge Embedded Switches and Enterprise/File Server Storage.

The Gen 5 devices are over twice the performance as Gen 4 devices and have reduced latency to ensure QoS and performance consistency. A wide range of enterprise features and specifications including NVMe 2.0 and OCP Data Center SSD 2.0 are supported. The DC5820 also operates in a PCIe 4.0 mode for inventory flexibility. The DC5820E offers enhanced endurance with up to 3 DWPDs for high workload applications.

Applications & Workloads

- Database
- Searching, Indexing, CDN
- Cloud and Hyper-scale Computing
- High Performance Software-defined Storage
- Deep Learning and Big Data Analytics
- High Performance Storage System
- ERP, SAP HANA
- BOSS, Banking, Taxing
- High Frequency Trading
- Online Payment

Product Family Overview

Model	Form Factor	Capacity	DWPD
DC5820	EDSFF E1.S SSD	3.84TB, 7.68TB	1
	EDSFF E3.S SSD	3.84TB, 7.68TB, 15.36TB	
	U.2 SSD		
DC5820E	EDSFF E1.S SSD	3.2TB, 6.4TB	3
	EDSFF E3.S SSD	3.2TB, 6.4TB, 12.8TB	
	U.2 SSD		

E3.S



U.2

GEN5
SSD STORAGE

Hyperscaler, Hyper
Converged, Enterprise,
and Edge Data Centers



E1.S

Benefits of SMART Gen5 SSDs

- PCIe 5 x 4 (PCIe 4 x 4 mode), NVMe 2.0
- 970MB/s Power Efficiency
- 2700 KIOPS
- Sequential R/W: 14GB/s/10GB/s
- Write Latency R/W: 55/9µs

Key Features

Reliability

- Telemetry
- Firmware Upgrade without Reset
- Persistent Event Log
- Latency Statistics & High Latency Logging
- SR-IOV
- Timestamp, Weighted Round Robin
- 8TB/s Enterprise TRIM

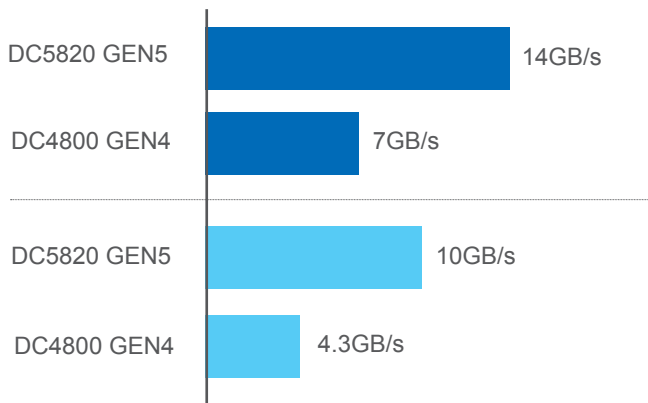
Enterprise Features

- TCG Opal2.0
- 128K Atomic Write
- AES 256 Data Encryption
- Sanitize
- Full Data Path and Power Failure Protection
- Secure Download and Secure Boot
- NVMe-MI 1.2b (ARP)

PCIe Gen5 vs. PCIe Gen4

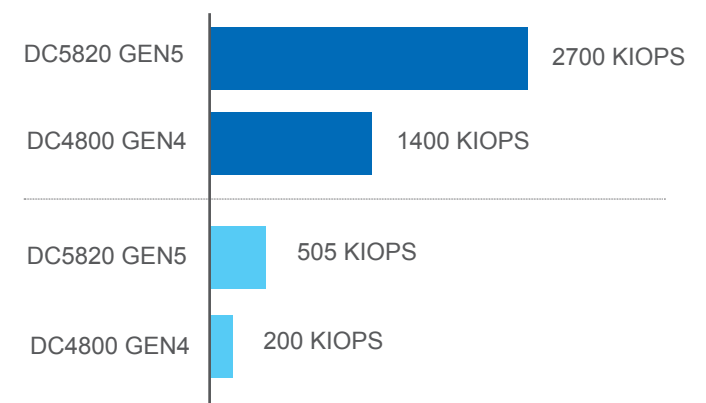
Sequential Performance (GB/s)

- 128K Sequential Read (GB/s)
- 128K Sequential Write (GB/s)



Random Performance (KIOPS)

- 4K Random Read (KIOPS)
- 4K Random Write (KIOPS)



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Specifications

	DC5820			DC5820E		
	EDSFF E1.S	EDSFF E3.S	U.2	EDSFF E1.S	EDSFF E3.S	U.2
NAND Type	eTLC					
Performance						
Host Interface Rate (maximum)	PCIe Gen5 x4					
Capacities	3.84TB	3.84TB	3.84TB	3.2TB	3.2TB	3.2TB
	7.68TB	7.68TB	7.68TB	6.4TB	6.4TB	6.4TB
		15.36TB	15.36TB		12.8TB	12.8TB
Sequential Read (maximum)	14000 MB/s			Thread Count = 1 Queue Depth = 128		
Sequential Write (maximum)	10000 MB/s			IO Size = 128KB 1MB/s=2 ²⁰ Byte/s		
Random Read Performance (KIOPS)	2700 KIOPS			Thread Count = 1 Queue Depth = 128		
Random Write Performance (KIOPS)	505 KIOPS			725 KIOPS IO Size = 4KB Sustained		
Random Read Latency (µs)	8/57			Thread Count = 1 Queue Depth = 1		
Random Write Latency (µs)	9/9			IO Size = 4KB Typical		
Environmental						
Operating Temperature	Commercial: 0°C to +70°C					
Storage Temperature	-40°C to +85°C					
ESD (Human Body Model)	+/-4 kV					
Electrical Specification						
Supply Voltage Min Max (V)	12V (-20%, +10%)					
Active Power Consumption (W)	PCIe Gen 5 Mode			PCIe Gen 4 Mode		
	Read	Write	Idle (Max)	Read	Write	Idle (Max)
3.84TB/3.2TB	< 15	< 16	< 7.8	< 12	< 14	< 7.8
7.68TB/6.4TB	< 18	< 20	< 7.8	< 12	< 17	< 7.8
15.36TB/12.8TB	< 19	< 20	< 7.8	< 12	< 17	< 7.8
Reliability, Mechanical						
MTBF (Hours)	>= 2M					
UBER	1 Sector per 10 ¹⁷ Read					
Retention	2 Months @ 40°C (EOL)					
DWPD 5 yrs 7% OP	1			3		
Enclosure	9.5mm	7.5mm	15mm	9.5mm	7.5mm	15mm



For more information, please visit: www.smartm.com

*Product images are for promotional purposes only. Labels may not be representative of the actual product.

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