Huawei ES3000 SSD

The fastest SSD accelerates your datacenter

Key Specifications

- 800 GB to 3.2 TB capacity
- Up to 800k ultra-high random read IOPS
- Up to 18 µs ultra-low write latency
- U.2 disk supports hot-swap and easy maintenance
- Supports UEFI bootable
- OS native driver, plug and play

ASIC-based SSD Controller

Huawei's ASIC SSD controller chip embeds FPGA units that support SSD algorithms. The ES3000 V3 provides up to 800k/175k read/write IOPS and 88 µs/18 µs read/write latency.

Advanced Scheduling Technologies

Huawei's Dynamic Scheduler algorithm monitors application I/O pressure in real time and dynamically adjusts SSD processes to ensure higher application I/O performance while delivering a 99.99% QoS level.

Application Optimized Features

The Atomic Write feature improves the MySQL tpmC by 7% and increases SSD endurance by 40%.

The SR-IOV feature supports 1 physical function and 15 virtual functions, and improves the VM I/O performance by over 40%.

The Multi-NameSpace feature allows multiple services to be deployed on the same server to share SSD resources.

Application Benefits

Database
TPS improved by 10x, 90% latency reduction

Distributed Storage
I/O performance improved by over 5x

Big Data
100 TB of data sorted in 98.8 seconds

Content Caching
Download speed improved by 6x

Hyper-Converged
Full NVMe SSDs acceleration

CAD/CAM
High-speed data read/write

U.2 Form Factor

HH-HL Form Factor

Innovation Makes Computing Simple

General Disclaimer

The information in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

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Specifications

Model	ES3500P V3	ES3600P V3	ES3600C V3
Form Factor	U.2	U.2	HH-HL[1]
Bus Interface	PCIe 3.0 x4	PCIe 3.0 x4	PCIe 3.0 x4
NVMe Standard	NVMe 1.2	NVMe 1.2	NVMe 1.2
NAND Flash	15/16 nm MLC	15/16 nm MLC	15/16 nm MLC
Usable Capacity	800 GB, 1.2/2.0/3.2 TB	800 GB, 1.2/1.6/2.0/ 3.2 TB	800 GB, 1.2/1.6/3.2 TB
Sequential Read/ Write Bandwidth @1MB	800 GB: 2.6/1.1 GB/s 1.2 TB: 2.9/1.7 GB/s 2.0 TB: 3.1/1.9 GB/s 3.2 TB: 2.9/1.8 GB/s	800 GB: 2.7/1.2 GB/s 1.2 TB: 3.1/1.8 GB/s 1.6 TB: 3.2/1.95 GB/s 2.0 TB: 2.6/1.5 GB/s 3.2 TB: 3.1/1.95 GB/s	800 GB: 2.7/1.2 GB/s 1.2 TB: 3.1/1.8 GB/s 1.6 TB: 3.2/1.95 GB/s 3.2 TB: 3.1/1.95 GB/s
Random Read/Write IOPS @4KB	800 GB: 650k/60k 1.2 TB: 710k/85k 2.0 TB: 800k/50k 3.2 TB: 715k/78k	800 GB: 700k/100k 1.2 TB: 800k/160k 1.6 TB: 800k/175k 2.0 TB: 650k/110k 3.2 TB: 800k/170k	800 GB: 700k/100k 1.2 TB: 800k/160k 1.6 TB: 800k/175k 3.2 TB: 800k/170k
Average Read/Write Latency @4KB	88 µs/18 µs	88 µs/18 µs	88 µs/18 µs
Power Consumption	6 W (idle) 21 W (max)	6 W (idle) 22 W (max)	6 W (idle) 22 W (max)
Endurance[2]	1 DWPD for 5 years	3 DWPD for 5 years	3 DWPD for 5 years
Max Data Written[3]	800 GB: 1.46 PBW 1.2 TB: 2.19 PBW 2.0 TB: 2.92 PBW 3.2 TB: 5.84 PBW	800 GB: 4.38 PBW 1.2 TB: 6.57 PBW 1.6 TB: 8.76 PBW 2.0 TB: 10.95 PBW 3.2 TB: 17.52 PBW	800 GB: 4.38 PBW 1.2 TB: 6.57 PBW 1.6 TB: 8.76 PBW 3.2 TB: 17.52 PBW
Weight	145 g	145 g	233 g
Trim	Supported		
Reliability	MTBF: 2 million hours; AFR: ≤0.44%; UBER: 10^{-17}		
Temperature	Non-operational: -40°C to +70°C Operational: 0°C to 70°C (U.2), 0°C to 55°C (HH-HL)		
Operating Systems	Operating systems with the NVMe driver integrated. Microsoft Windows Server 2008R2/2012/2012R2/2016, Windows 7/8/10 Linux: RHEL; SLES; OEL; CentOS; Ubuntu Hypervisors: VMware ESXi; Windows Server Hyper-V; Oracle VM; Citrix XenServer; Huawei FusionSphere		
Supported Servers	HH-HL form factor: servers providing standard PCIe 3.0 x4/x8/x16 slots. U.2 form factor: servers supporting NVMe PCIe SSD disks.		
Certifications	America/ FCC CFR47 Part 15 Subpart B:2015; ICES-003 Issue 6:2016; UL 60950-1, 2nd Edition; CAN/CSA C22.2 No. 60950-1-07, 2nd Edition Japan/ VCCI: VCCI V-3:2015 Europe/ WEEE: 2002/96/EC; RoHS: 2002/95/EC; REACH: EC 1907/2006; CE: EN 60950-1:2006 2nd Ed; EN 55022:2006 + A1:2007 (Class A); EN 55024:1998 + A1:2001 + A2:2003; EN 61000-3-2:2006; EN 61000-3-3:1995 +A1:2001 +A2:2005 China/ RoHS: SJ/T-11363-2006; SJ/T-11364-2006		

NOTES:
The specifications are subject to change without notice. Performance results are based on internal testing and use. Results and performance may vary according to configurations and systems, including drive capacity, system architecture, and applications.
1 HH-HL: Half-Height and Half-Length.
2 Endurance DWPD: Disk Writes per Day.
3 Max Data Written PBW: PetaByte Writes.