

18 μ s
Latency3.2GB/s
Bandwidth800k
IOPS

Huawei ES3000 NVMe SSD

The fastest SSD accelerates your datacenter

Key Specifications

- 800 GB to 6.4TB capacity
- Up to 800k ultra-high random read IOPS
- Up to 18 μ s 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 μ s/18 μ s 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 tpnC by 7% and increases SSD endurance by 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

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HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base
Bantian Longgang
Shenzhen 518129, P.R. China
Tel: +86-755-28780808
Version No.: M3-035260-20170504-C-1.0

www.huawei.com

Specifications

Model	ES3500P V3	ES3600P V3	ES3600C V3	ES3620P V3	ES3620C V3
Form Factor	U.2	U.2	HH-HL1	U.2	HH-HL1
Bus Interface	PCIe 3.0 x4	PCIe 3.0 x4	PCIe 3.0 x4	PCIe3.0x4	PCIe3.0x4
NVMe Standard	NVMe 1.2	NVMe 1.2	NVMe 1.2	NVMe1.2	NVMe1.2
NAND Flash	15/16 nm MLC	15/16 nm MLC	15/16 nm MLC	3D MLC	3D MLC
Usable Capacity	800GB, 1.2/2.0/3.2/ 4.0 TB	800 GB, 1.2/1.6/2.0/ 3.2 TB	800 GB, 1.2/1.6/3.2 TB	6.4TB	6.4TB
Sequential Read/Write Bandwidth @1MB	800GB: 2.4/1.0GB/s 1.2TB: 2.9/1.7GB/s 2.0TB: 3.1/1.9GB/s 3.2TB: 2.9/1.8GB/s 4.0TB: 3.1/1.9GB/s	800GB: 2.7/1.1GB/s 1.2TB: 3.1/1.8GB/ 1.6TB: 3.2/1.95GB/s 2.0TB: 2.75/1.55GB/s 3.2TB: 3.1/1.95GB/s	800GB: 2.7/1.1GB/s 1.2TB: 3.1/1.8GB/s 1.6TB: 3.2/1.95GB/s 3.2TB: 3.1/1.95GB/s	6.4TB: 3.0/1.8GB/s	6.4TB: 3.0/1.8GB/s
Random Read/Write IOPS @4KB	800GB: 600k/55k 1.2TB: 710k/85k 2.0TB: 800k/50k 3.2TB: 715k/78k 4.0TB: 760k/38k	8800GB: 680k/100k 1.2TB: 800k/160k 1.6TB: 800k/175k 2.0TB: 650k/110k 3.2TB: 800k/170k	800GB: 680k/100k 1.2TB: 760k/160k 1.6TB: 800k/175k 3.2TB: 800k/170k	6.4TB: 750k/40k	6.4TB: 750k/40k
Average Read/Write Latency @4KB	88 μs/18 μs	88 μs/18 μs	88 μs/18 μs	110μs/20μs	110μs/20μs
Power Consumption	7 W (idle) 21 W (max)	7 W (idle) 22 W (max)	7 W (idle) 22 W (max)	7 W(idle) 25 W(max)	7W(idle) 25 W(max)
Endurance ²	1 DWPDP for 5 years 4.0 TB: 0.56 DWPDP	3 DWPDP for 5 years	3 DWPDP for 5 years	3DWPDP for 5 years ⁴	3DWPDP for 5 years ⁴
Max Data Written ³	800 GB: 1.46 PBW 1.2TB: 2.19 PBW 2.0TB: 2.92 PBW 3.2TB: 5.84 PBW 4.0TB: 4.08 PBW	800 GB: 4.38 PBW 1.2TB: 6.57 PBW 1.6TB: 8.76 PBW 2.0TB: 10.95 PBW 3.2TB: 17.52 PBW	800 GB: 4.38 PBW 1.2TB: 6.57 PBW 1.6TB: 8.76 PBW 3.2TB: 17.52 PBW	6.4TB: 35.04 PBW	6.4TB: 35.04 PBW
Weight	145 g	145 g	233 g	145g	233g
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 DWPDP: Disk Writes per Day.

3 Max Data Written PBW: PetaByte Writes.

4 6.4TB 3 DWPDP for 5 years, 35.04 PBW endurance: 8KB alignment, 8KB data block 100% random write.