DERA NVMe SSD
D6436/ D6456

Highlights

- PCIe 3.0 x4
- NVMe 1.4 compliant
- Data integrity of enterprise class
- 3.2TB- 7.68TB capacity options
- Up to 3.3/ 3.2 GB/s sequential R/ W bandwidth
  Up to 810K/ 390K random 4K R/ W IOPS
- YMTC 3D TLC NAND
- Native driver support of mainstream operating systems and hypervisors
- UEFI bootable
- Surprise hot-pluggable

Applications & Workloads

- Database
- Cloud Computing
- Streaming, CDN
- Big Data Analytics
- AI/ ML/ DL Training
- Software Defined Storage
- Banking & Telecom

Controller and Software-hardware Co-designed

The 2nd Generation ASIC controller of DERA D6436/ D6456 NVMe SSD is developed by DERA with software-hardware co-designed methodology, achieved enterprise-class data integrity, many built-in hardware acceleration units, sophisticated NAND flash management, and performance aggregation in a power-efficient way. Architected with advanced YMTC 3D TLC NAND, D6436/ D6456 deliver reliable and high performance NVMe storage solution.
D6436/ D6456 offer endurance and capacity options of 3.84TB, 7.68TB at 1 DWPD (5yrs), and 3.2TB, 6.4TB at 3 DWPD (5yrs).

Enterprise-Class Data Integrity

DERA D6436/ D6456 NVMe SSD realized intensive hardware LDPC units, end-to-end protection on the whole data paths against silent errors, adaptive redundancy protection among independent NAND units, and protection against unexpected power-losses, which are forged into an integrated protection for user data. In addition, D6436/ D6456 NVMe SSD constantly sense drive's healthy and react in time accordingly, which is available for host management software to perceive and handle potential drive failure.

High Performance and Low Latency

DERA D6436/ D6456 NVMe SSD achieved high performance with low latency. Sustained 4KB random write IOPS up to 390K, random read/ write latency low to 84/ 16us. Optimized FTL algorithm sufficiently anticipate the extreme conditions of highly-intense workloads and workload variations with sophisticated scheduling and controls over front-end I/O demands and FTL backend activities, ensuring a stable performance in all cases.
D6436/ D6456 NVMe SSD deliver a performance consistency above 90% in significantly heavy random I/O workloads.

Product Series		D6436		D6456	
Capacity (TB)		3.84	7.68	3.2	6.4
Form Factor		U.2/ AIC			
Host Interface		PCIE 3.0x4			
NVMe Compliance		NVMe 1.4			
NAND		YMTC 3D TLC NAND			
Seq. Read/ Write [1]		Up to 3400/ 3200 MB/s		Up to 3400/ 3200 MB/s	
Ran. Read/ Write [2]		Up to 810K/ 200K IOPS		Up to 810K/ 390K IOPS	
Ran. R/ W Latency (μs) [3]		84/ 16			
Power Consumption [4]	Write	18W			
	Read	12W			
	Idle	5W			
DWPD (5 years)		1 DWPD		3 DWPD	
Reliability		UBER 10^{-17}			
Temperature		0-70°C			
Security Support		Windows Server, Windows10 (64-bit), VMware ESXi, RHEL, Centos, SLES, Ubuntu, Fedora			
OS Support		UL, CE, FCC, RoHS			

[1] 100%LBA, OIO64 (TC=1, QD=64).

[2] 100%LBA, measured with OIO256 (TC=4, QD=64).

[3] 100%LBA, OIO1 (TC=1, QD=1).

[4] 100%LBA, Sequential R/W power consumption is measured with 128KB, OIO64 (TC=1, QD=64) which is lower than Random operation. Random R/W measured with 4KB, OIO256 (TC=4, QD=64). Scope trigger over 100ms sample period.

*Performances measured by FIO tool on linux, result may differ according to testing platform.1MB/s = 1,000,000 bytes/ second.

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