

Oracle Flash Accelerator F160 PCIe Card



Oracle Flash Accelerator F160 PCIe Card is the result of a deep engineering-level partnership between Intel and Oracle, specifically designed to accelerate Oracle Database performance. This card interfaces with the server directly over PCI Express (PCIe) and provides a high-bandwidth low-latency flash-based caching tier for Oracle Database. Oracle servers configured with Oracle Flash Accelerator F160 PCIe Card can provide more than 1 million IOPS to relational database management systems (RDBMS) platforms. Oracle has coengineered the systems BIOS (x86) and OpenBoot PROM or OBP (SPARC) along with Oracle Integrated Lights Out Manager (Oracle ILOM) to maximize performance and reliability of this flash subsystem. In addition, Oracle-specific modifications are made to the device drivers in Oracle Solaris and Oracle Linux to minimize CPU overhead and latency for higher levels of software performance.

KEY FEATURES

- 1.6 TB NVMe device
- Four-lane PCIe Gen 3 interface
- 260 K random IOPS (8 K), 2.1 GB/sec throughput performance
- 30 microsecond write latency (8 K transfer size)
- Advanced write endurance and proactive health monitoring
- Enterprise quality and reliability

KEY BENEFITS

- Optimize performance with Oracle systems and Oracle Database
- Increase application performance, productivity and business response
- Eliminate I/O bottlenecks
- Improve server efficiency

Non-Volatile Memory Express (NVMe) Design

Oracle Flash Accelerator F160 PCIe Card is a Non-Volatile Memory Express (NVMe)-based flash card. This card connects to the server using four lanes of PCIe Gen 3 to connect directly to the flash bank, resulting in an aggregate bandwidth of 32 Gb/sec, nearly three times that of cards for traditional SAS-3-based flash. This direct connection enables much lower latency and higher bandwidth than standard SAS-3-based devices.

Oracle Unique High Performance and Reliability

Oracle Flash Accelerator F160 PCIe Card is designed with high-endurance enterprise NAND flash memory and Intel's NVMe controller ASIC. With PCIe Gen 3 support and NVMe queuing interface, the 1.6 TB NVMe PCIe card delivers excellent sequential read performance and sequential write speeds. Oracle Flash Accelerator F160 PCIe Card delivers very high random read and write IOPS. Oracle and Intel work together to extend write endurance up to 20x that of standard flash controllers for greater reliability. Sophisticated algorithms provide advanced error-correction, over-provisioning, and wear leveling for improved efficiency and data integrity. Battery-less power fail protection circuitry provides end-to-end data protection and fast (5 seconds) power fail recovery. Proactive health monitoring features provide an added level of durability.

ORACLE FLASH ACCELERATOR F160 PCIE CARD SPECIFICATIONS

Capacity	
Useable Capacity	1.6 TB
Domains	Single domain
NAND Type	Intel 20 nm (L85/128M20C) high-endurance enterprise NAND flash memory
Performance *	
Random Read IOPS (8 K)	260,000
Random Write IOPS (8 K)	42,000
Read Bandwidth (1 M)	2.099 GB/sec
Write Bandwidth (1 M)	1.254 GB/sec
Write Latency (8 K)	30 microseconds
Read Latency (8 K)	120 microseconds
Technology	
Interface	PCI Express 3.0 (x4)
Flash Controllers	NVMe Controller ASIC
Form Factor	Low-profile PCIe Gen 3 (2.7 inches x 6.6 inches)
Reliability	
MTBF	2 M hours
Power	
Max Power	25 W max (4 W idle)
Compatibility	
Servers and Operating Systems	Qualified Oracle servers and operating systems

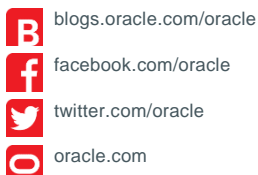
* Using compressible data (1.25:1)

CONTACT US

For more information about Oracle Flash Accelerator F160 PCIe Card, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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