

Flashtec™ NVRAM Drive Family

NV1616 and NV1604 Flashtec PCIe NVRAM Drives

The Microsemi Flashtec™ NVRAM Drive family provides a PCI Express NVRAM solution based on the most advanced NVMe controller on the market. This family provides a new level of performance to the memory/storage hierarchy, ushering storage system OEMs, cloud applications, and service providers to the era of storage-class memory.

Establishes New Storage Tier with Superior Performance

- Non-volatile DRAM-like performance, NAND persistence
- Over 10 million IOPS (direct memory mode, available for NV1616 only)
- Sub-microsecond latency

Ease-of-Use for Faster Time to Market

- Industry-standard interfaces
- Application-friendly for ease of integration
- Zero maintenance green backup
- “Enterprise Class” for mission-critical data center
- Uncompromising quality and reliability
- Unlimited endurance NVRAM
- Small form factor for high-density rack solutions

Cloud-Scale Performance and Availability

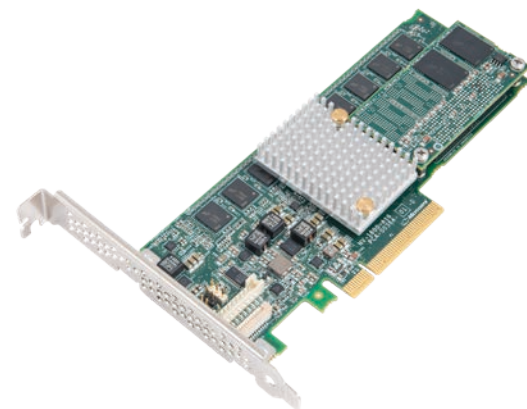
While SSD solutions continue to replace traditional HDDs in the performance tier of the storage hierarchy, there remains a significant performance gap between the memory tiers and the storage tiers in terms of latency, endurance, and high availability. As application demands continue to increase at an ever growing pace to keep up with the growth rate of cloud services, relying on volatile memory to achieve desired performance leaves applications vulnerable to data loss in the event of a system failure.

There is a need for a new tier of memory that provides mission-critical applications with the necessary safety net for their data while keeping pace with the application requirements for performance without compromising data protection, reliability, and availability.

Flashtec NVRAM Drive products serve exactly that need, and with >10M IOPS and up to 16 GB of memory per card, the product family can address the needs of the most demanding applications.

Lower Total Cost of Ownership (TCO)

Power failure protection is built into Flashtec NVRAM Drive products. A flash-based backup unit protects DRAM content in the event of a power failure. This backup unit eliminates the Uninterruptible Power Supply (UPS) or Backup Battery Unit (BBU), frees up rack space, and reduces support and maintenance costs without compromising critical system data across power failures.



Highlights

- Unlimited endurance: unlike SSDs, DRAM has practically unlimited endurance, and with up to 16 GB of non-volatile DRAM memory, NVRAM drives can fit very demanding workloads as well
- High-performance I/O: 1 million IOPS in NVMe block mode (512 B); over 10 million IOPS in direct memory mode
- Power failure protection: flash-based backup unit protects DRAM content in the event of a power failure
- Higher availability: a fast backup and recovery cycle ensures that mission-critical applications will have a shorter recovery time across power failure events
- Lower TCO: eliminating the Uninterruptible Power Supply (UPS) or Backup Battery Unit (BBU) frees up rack space and reduces support and maintenance costs without compromising critical system data across power failures

Applications

- Write cache for low-latency response time
- 64-bit addressable persistent metadata memory region
- Persistent shared memory for scale-out clustered systems
- High-performance journaling or write ahead logging
- Persistent cache for fast cache rebuild
- Performance tier de-staging to sequential-access capacity tier

Included

- NVRAM card
- SCM-F100/F35 module and cable

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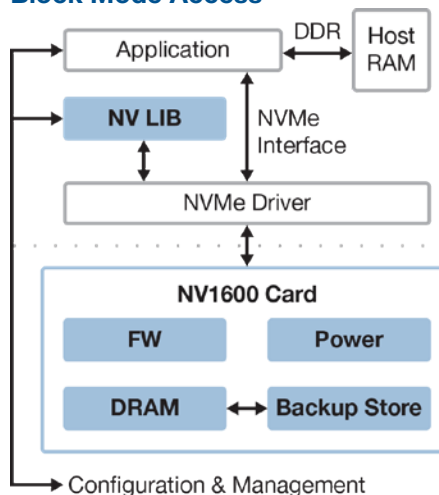
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Features

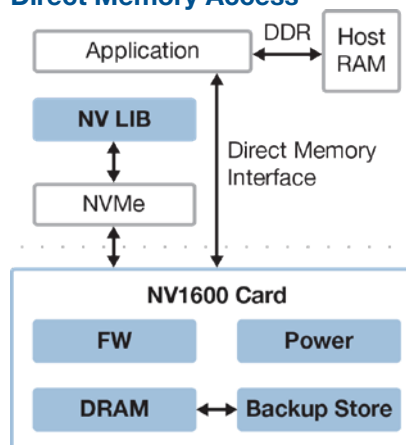
General Features	
Host interface	x8 lane
PCI express	3.0
Form factor	Low profile MD2 PCIe add-in card
Access modes	Block mode and direct memory mode
Memory capacity	4/16 GB configurations
Backup store	Flash module
Data retention offline	3 months
Backup power supply	Tethered super capacitor mode
Restore time	<15 sec
Backup time	<20 sec
Backup cycles	Up to 3000
Monitoring and alerts	Yes
Hardware Support	
Driver support industry	Supported NVMe drivers
Application support	NV-lib for application integration
Data Protection and Security	
Authentication	Optional host authentication sequence
Mechanical and Environmental	
Form factor	MD2 low profile PCIe card
Operating temperature	0 °C to 50 °C at 200 LFM
Power consumption	<20 W typical; 5 W idle
Reliability	
Maintenance	No maintenance required
Operational lifetime	5 years
Compliance and Certification	
NVMe.org	NVMe 1.0 compatible
PCIe SIG	Certified

Further resources and information can be found at:
<http://www.microsemi.com/products/storage/storage>

Block Mode Access



Direct Memory Access



Ordering Information

Model	Description	Part Number
NV1616	16 GB NVRAM PCIe drive and SCM-F100	2284700-R
NV1604	4 GB NVRAM PCIe drive and SCM-F35	2285400-R