

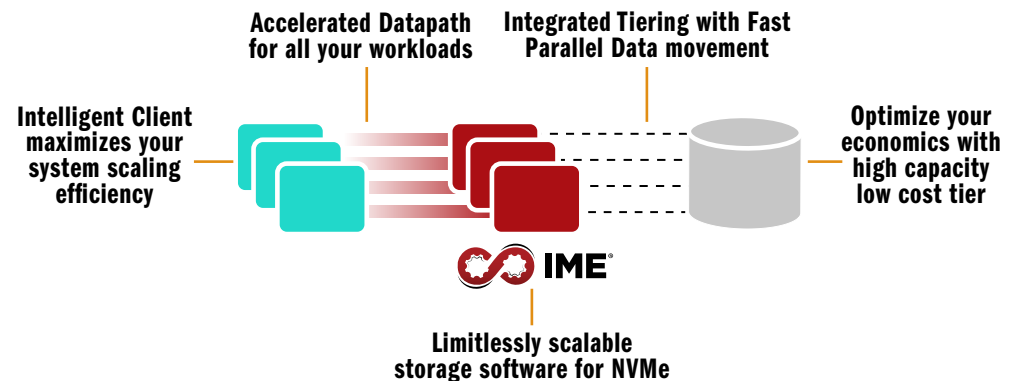
Infinite Memory Engine[®]

Fastest File Storage for AI and HPC

Modern workloads in AI, Big Data and HPC are creating demand for a new approach to high performance storage. DDN's Infinite Memory Engine (IME[®]) is the first and only scale-out, software-defined file system that streamlines the data path for application I/O. IME software interfaces directly to applications and secures your data via a data path that eliminates file system bottlenecks. With IME, architects can realize true flash-cache economics with a storage architecture that separates capacity from performance.

Innovation at Scale

IME was built ground-up as the first and fastest scale out storage software that leverages NVMe flash to deliver the ultimate performance to your application workloads. IME delivers the benefits of true parallel scale-out design without compromising on performance, accelerating random, sequential, read and write workloads.



Limitless Capacity and Integrated Tiering

IME's patented network erasure coding allows for scaling unmatched by any file system. IME software intelligently distributes application I/O eliminating hot spots in real-time and spreading your application workload evenly across your infrastructure. IME integrates natively into low-cost data tiers meaning your file system can scale limitlessly, with the economics to suit your budget.

- Maximize your flash media performance and lifetime
- Improve the efficiency of your network and storage through adaptive data routing
- Best Performance for the diverse I/O requirements of modern workloads and mixed CPU/GPU environments
- Ideal for delivering the data rates needed across commercial analytics and machine learning

- **Unmatched Performance**
- **Scale to 100s of PBs**
- **Extreme IOPS & Throughput**
- **Best Economics**

- Software-Defined Flash Platform
- Scale-Out from TBs to PBs
- Reduces Performance Infrastructure Footprint
- Eliminates File System Bottlenecks
- Delivers Predictable Run Times
- Accelerate One Application or all I/O
- Compute, Storage, and Network Agnostic
- Supports InfiniBand, Omni-Path, and Ethernet
- Flexible Data Protection Options

IME Deployments



IME is well suited for a variety of use cases including:

- Machine Learning and Analytics: Scalable flash software that delivers performance into your containerized data pipelines
- Application Ensembles: A single namespace that serves all your complex workloads
- Application Workflows: Maintain your hottest data in IME's NVMe tier
- In-situ Analysis: Make real-time decisions on your live data streams
- Application Pre and Post-Processing: Prepare, format, adapt your data through IME's fast interfaces
- Checkpointing: Store HPC checkpoints radically fast with IME's unique approach to file I/O

Appliance or in the Cloud

IME is available as software only running in the cloud or as an integrated appliance. The IME140 and IME240 appliances are built on a best-of-breed 1U and 2U storage respectively. The IME140 delivers over 20GB/s of bandwidth and over 350K IOPs direct to applications with up to 10 NVMe drives. The IME240 delivers over 20GB/s of bandwidth with up to 24 NVMe drives. Both IME140 and IME240 support flexible N+K erasure coding.



IME Hardware Specifications

	IME140®	IME240®
System Features	Dual redundant power and cooling	
Fabric Ports	Up to 2x InfiniBand™ EDR/FDR; or 2x 10/40/100GbE Ethernet; or 2x Intel® Omni-Path	2x InfiniBand™ EDR/FDR; or 2x 10/40/100GbE Ethernet; or 2x Intel® Omni-Path
Weight	Maximum weight: 48lbs / 21.8KG	Maximum weight: 55lbs / 24KG
Dimensions	1RU; (WxHxD) 17.2 x 1.7 x 27.82 in. (437 x 43 x 707 mm)	2RU; (WxHxD) 17.2 x 3.5 x 27.76 in. (437 x 89 x 705 mm)
Power	550W total system power consumption (AC input requirement, max. config. with nine data drives)	796W total system power consumption (AC input requirement, max. config. with 23 data drives)
Data Drives	NVMe data drives up to 10 per system. Capacities from 2TB per NVMe SSD.	NVMe data drives up to 23 per system. Capacities from 2TB per NVMe SSD.
System Drive	2x 2.5", 1TB, SAS3.0 12GB/S, 7.2K RPM	2x 2.5", 1TB, SAS3.0 12GB/S, 7.2K RPM
CPU, Memory	Dual Intel® Xeon® Scalable Processors (skylake), 8x 8GB DDR4-2400 RAM	Dual Intel® E5 Series Processor, 8x 16GB DDR4-2400 RAM
Out-of-Band Mgt.	Dedicated IPMI LAN RJ45	
Drive Bays	10, tool-less 2.5" drive bays	24, tool-less 2.5" drive bays
Sequential Read and Write Performance	Over 20GB/s (EDR/OPA)	Over 20GB/s (EDR/OPA)
Erasure Coding	N (data)+K (parity) Flexible Erasure Coding options with K=1, 2 or 3. Supports (3+1)...(15+1), (6+2)... (15+2), (9+3)...(15+3)	

About DDN®

DataDirect Networks (DDN) is the world's leading big data storage supplier to data-intensive, global organizations. DDN has designed, developed, deployed, and optimized systems, software, and solutions that enable enterprises, service providers, research facilities, and government agencies to generate more value and to accelerate time to insight from their data and information, on premise and in the cloud.

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