

Aug 4, 2025 11:00 AM Eastern Daylight Time

MangoBoost Sets New Benchmark with Record-Breaking DPU-Based AI Training Storage Solution in MLPerf Storage v2.0

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BELLEVUE, Wash.--(BUSINESS WIRE)--MangoBoost, a provider of cutting-edge system solutions for maximizing compute efficiency and scalability, has delivered record-breaking performance in the latest MLPerf Storage v2.0 with its Mango StorageBoost™ solution. This achievement marks a major milestone for DPU-accelerated NVMe/TCP storage systems, showcasing industry-leading performance, efficiency, and scalability for AI training workloads.

MangoBoost's submission, comprising the Mango StorageBoost™ NVMe/TCP Initiator (NTI) and Target (NTT), demonstrated line-rate throughput over a 400G Ethernet fabric, providing near-local SSD performance for distributed AI workloads.

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- Near-local SSD performance when compared to local Solidigm D7-PS1030 drives
- Superior performance-to-cost versus NVIDIA's BlueField-3 DPU, with significantly lower TCO

Unlocking New Possibilities in AI Storage Architecture

MangoBoost's submission deployed its NTI on the host and NTT on the storage server, connected via a 400G Ethernet switch. This configuration allowed the system to emulate demanding AI workloads across multiple GPUs with near-zero CPU overhead and maximum bandwidth utilization.

Furthermore, MangoBoost's performance outpaced even BlueField-3 systems running both NVMe/TCP and NVMe/RDMA in equivalent test conditions. The Mango StorageBoost DPU architecture not only outperformed on throughput but also delivered significant reductions in cost of ownership as systems scale.

The Technology Behind the Results

Mango StorageBoost™ consists of three tightly integrated solutions:

- NVMe/TCP Initiator (NTI): Offloads the entire NVMe/TCP stack to hardware, delivering full-duplex line-rate performance with no CPU consumption.
- NVMe/TCP Target (NTT): Fully accelerates TCP/IP and NVMe-oF processing, enabling storage disaggregation over standard Ethernet with zero CPU involvement.
- GPU Storage Boost (GSB): Enables direct DMA transfers between GPU memory and local or remote storage, bypassing CPU and significantly improving I/O efficiency.

general-purpose GPUs, accelerators, and storage devices, enabling cost-efficient, standardized AI infrastructure. Founded in 2022 on a decade of research, MangoBoost is rapidly expanding its operations in the U.S., Canada, and Korea.

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