

Cloudian Delivers Breakthrough AI Performance with New PyTorch Connector Leveraging NVIDIA GPUDirect Storage Technology

74% Performance Boost and 43% Reduction in CPU Utilization Accelerates Machine Learning Workflows

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[Cloudian](#), the leader in enterprise-grade object storage solutions, today announced the availability of its new [PyTorch](#) connector with Remote Direct Memory Access (RDMA) support, delivering unprecedented performance improvements for artificial intelligence

and machine learning workloads. Built on [NVIDIA GPUDirect Storage](#) technology and optimized for NVIDIA Spectrum-X networking infrastructure, the breakthrough solution demonstrates a 74% increase in data processing performance while reducing processor utilization by 43%, representing a significant advancement in AI workflow acceleration.



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Testing conducted using TorchBench, an open source PyTorch performance measurement tool, showed remarkable improvements in image processing capabilities. The new RDMA-enabled connector, built on NVIDIA GPUDirect Storage technology, processed 52,000 images per second compared to 30,000 images per second using the default S3 connector—a substantial performance gain that directly translates to faster model training and reduced computational costs for AI practitioners.

"This represents a fundamental breakthrough in how AI workloads access and process data through advanced NVIDIA networking acceleration," said Neil Stobart, CTO at Cloudian. "By

leveraging NVIDIA GPUDirect Storage technology to eliminate traditional network bottlenecks, we're enabling data scientists and AI engineers to supercharge their workflows while reducing infrastructure costs through direct GPU-to-storage communication."

With RDMA, the enhanced connector is able to bypass traditional CPU-intensive network protocols, enabling direct memory-to-memory data transfers between Cloudian storage systems and GPU-accelerated AI frameworks running on NVIDIA network infrastructure including NVIDIA Spectrum-X Ethernet switches and NVIDIA ConnectX SuperNICs. This architectural advancement proves particularly significant for PyTorch users leveraging NVIDIA accelerated computing, who represent a substantial portion of the machine learning community including researchers at major technology companies, academic institutions, and AI-focused startups.

Benchmark testing was conducted using Cloudian HyperStore 8.2.2 software running on six Supermicro servers equipped with NVIDIA networking platforms in an all-flash media configuration, representing enterprise-grade storage infrastructure commonly deployed for GPU-accelerated AI workloads.

The PyTorch ecosystem serves millions of developers worldwide, from individual researchers to large-scale enterprise AI operations utilizing NVIDIA accelerated computing infrastructure. Organizations implementing computer vision, natural language processing, and deep learning applications on NVIDIA platforms stand to benefit significantly from the reduced training times and lower computational overhead delivered by the NVIDIA GPUDirect Storage connector.

The integration with NVIDIA GPUDirect Storage technology ensures optimal data path efficiency for AI workloads, eliminating unnecessary data copies and reducing latency in GPU-centric machine learning pipelines. This direct storage-to-GPU communication pathway maximizes the performance potential of NVIDIA's advanced networking and computing infrastructure.

The Cloudian PyTorch connector is now available for evaluation, enabling organizations to assess the performance benefits within their NVIDIA-accelerated AI environments.

About Cloudian

Cloudian provides an exabyte-scalable data platform optimized for AI workloads, data protection, and advanced analytics. The company's HyperStore solution delivers native S3 API compatibility, government-verified security, and industry-leading performance, enabling organizations to efficiently manage massive datasets across distributed environments. Through partnerships with leading technology providers like NVIDIA, Cloudian delivers the ideal foundation for data-intensive applications that drive business innovation and competitive advantage. Learn more at www.cloudian.com.

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