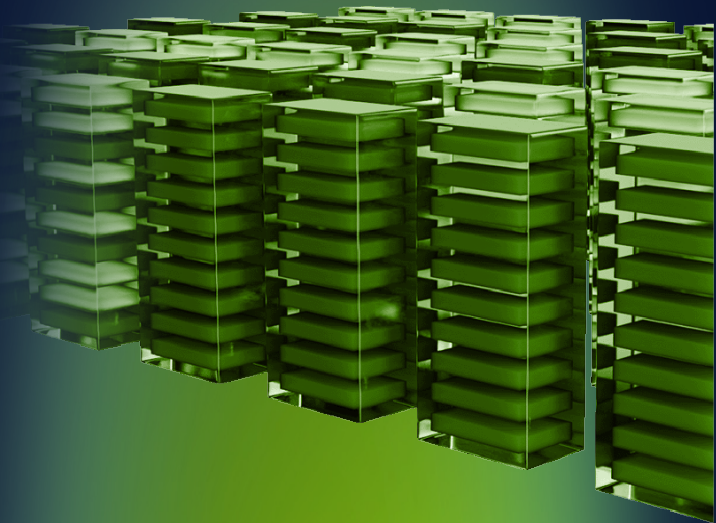# Optimize VAST Data Platform with NVIDIA BlueField DPUs

Simple, Secure, Cloud–Scale AI

Simplicity that Drives Innovation

Customers choosing the VAST Data Platform and NVIDIA to power their AI initiatives now have a new option to radically simplify their data center infrastructure: VAST software deployed on NVIDIA® BlueField®–3 data processing units (DPUs). Emerging generative AI, deep learning, and business intelligence applications become easier to deploy and support with enhanced security and high–performance storage services that scale to hundreds of thousands of GPUs.

VAST's revolutionary Disaggregated, Shared-Everything (DASE) architecture enables the independent scaling of compute (CNodes) for performance and capacity (DNodes) across multiple generations of heterogeneous infrastructure. This flexibility enables the deployment of VAST CNodes running storage services on BlueField DPUs within NVIDIA accelerated computing servers. This new capability, combined with the BlueField DPUs powering VAST DNodes in resilient NVMe enclosures, creates an elegant end-to-end solution that provides operational simplicity, reduces rack space, and lowers power consumption, without sacrificing performance or reliability.

Zero silos, zero trust

VAST is quickly becoming the de facto software stack for the new generation of GPU clouds that are answering the soaring demand for AI services. These innovators are selecting VAST over legacy HPC solutions to streamline AI pipelines. High–performance SQL, object, and file storage access to all data eliminates the need for additional data copies and complex data management. Every step of the pipeline from ingest to model training to inference is served by a single tier of NVMe storage optimized by VAST's industry–leading Similarity Data Reduction technology. VAST's inherently multi–tenant architecture combined with the networking, security and management capabilities of NVIDIA BlueField DPUs makes it simple for service providers and AI–driven enterprises to build a catalog of AI service offerings on a zero trust foundation.

Why VAST & NVIDIA Bluefield?

Simplified cloud–scale operations optimized for service providers

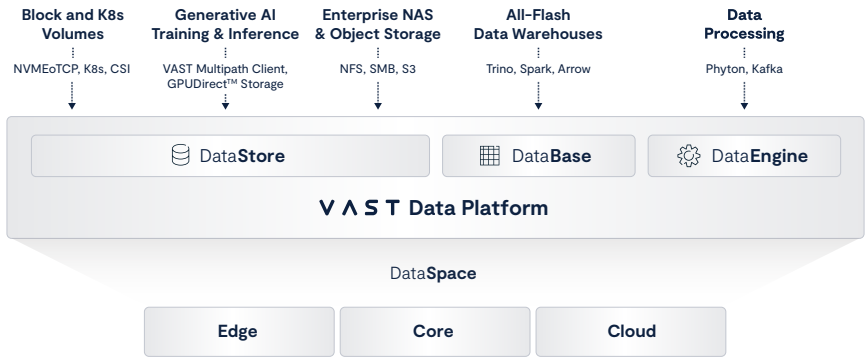**Save up to 70% power and space vs traditional architectures**

Streamline AI pipelines by eliminating silos and complex data management
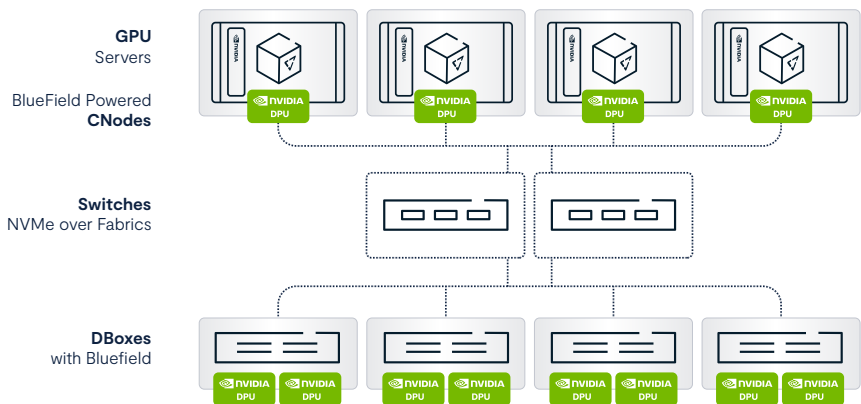
Increase GPU utilization with 100% AI–ready data

Fortify security with a zero trust, multi–tenant architecture

Block and K8s Volumes	Generative AI Training & Inference	Enterprise NAS & Object Storage	All-Flash Data Warehouses	Data Processing
NVMEoTCP, K8s, CSI	VAST Multipath Client, GPUDirect™ Storage	NFS, SMB, S3	Trino, Spark, Arrow	Phyton, Kafka

DataStore   DataBase   DataEngine

V∧ST Data Platform

DataSpace

Edge   Core   Cloud

VAST Data Platform powered by NVIDIA BlueField DPUs simplifies, secures, and accelerates AI workloads

The Data Platform for the Entire AI Pipeline

GPU Servers

BlueField Powered CNodes

Switches
NVMe over Fabrics

DBoxes
with Bluefield

The VAST Data Platform makes it possible for organizations to make 100% of their data AI-ready. Eliminating disparate data stacks reduces time to insight while fortifying security and improving reliability.

Trusted by Industry Leaders

CoreWeave   Lambda   Genesis Cloud™   ZOOM   TACC

About VAST

VAST Data is the data platform software company leading business into the AI era. Accelerating time-to-insight for workload-intensive applications, the VAST data platform delivers scalable performance, radically simple data management and enhanced productivity. Launched in 2019, VAST is the fastest-growing data infrastructure startup in history.

Looking to simplify your data center and unlock insights from all of your data? **Contact us at** hello@vastdata.com

About NVIDIA

Since its founding in 1993, NVIDIA has been a pioneer in accelerated computing. The company's invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined computer graphics, ignited the era of modern AI and is fueling industrial digitalization across markets. NVIDIA is now a full-stack computing infrastructure company with data-center-scale offerings that are reshaping industry.