

Trusted Edge Servers for Defense & Aerospace

One Solution for Data Security, Storage, & Management



Protect. Perform. Prosper.

Quickly secure, transfer, and manage large amounts of sensitive data at the edge with a Trenton-NGD compute solution.

Trenton Benefits



Ruggedized



Made In USA



Tested



Certified



Customizable

NGD Benefits



In-Situ Processing



Manage Massive Amounts of Storage



No Added Power

For Security-Sensitive Applications at the Edge

Edge computing and data security are the major industry buzzwords of 2021, and it's easy to understand why. Seventy-five percent of enterprise-generated data will be created and processed at the edge by 2025, according to Gartner research, and the U.S. government's FY2021 cybersecurity budget is set at a whopping \$18.78 billion. Trenton Systems and NGD Systems have created a line of high-performance computing solutions that addresses the growing computational and storage demands of edge computing as well as mounting cybersecurity concerns within the aerospace and defense industries.

1. **3U BAM Server** Comprehensive cybersecurity platform and actively managed supply chain security that protects hardware, firmware, and software.
2. **JBOF Storage Enclosure** Twenty-four front-removable drives with native end-to-end PCIe support
3. **High-Capacity Computational Storage Drives (CSDs)** achieve faster real-time results with in-situ processing, minimize attack surface by avoiding data exposure beyond the point of ingest, and store as much as desired.

How It Works

The 3U BAM Server incorporates an intelligent security platform that protects each layer of the system stack - hardware, firmware, and software - holistically. Equipped with Intel PFR, Intel SGX, Intel TME, and benefitting from Trenton Systems' actively managed supply chain security practices and Counterfeit Protection Program (CPP), the made-in-USA 3U BAM Server is designed from inception to secure sensitive data from the motherboard up. When paired with Trenton Systems' 24-drive JBOF Storage Enclosure populated with NGD Systems' high-capacity NVMe computational storage drives (CSDs), customers can expect accelerated data security, data storage, and data management for large AI/ML workloads, all from a single, deployment-ready solution designed to endure and perform seamlessly at the defense and aerospace edge.



3U BAM Server + NVMe JBOF Storage Enclosure

The cybersecure, high-performance 3U BAM Server is equipped with third-generation Intel Xeon Ice Lake SP CPUs, 11 optimized PCIe 4.0 slots, 24 DDR4-3200 memory slots, and multiple hardware, firmware, and software security technologies developed by companies at the forefront of today's cybersecurity landscape.

The short-depth, lightweight JBOF Storage Enclosure with native end-to-end PCIe support achieves 27.2 GB/s read and write speeds, and customers may populate the enclosure with up to 24 front-removable U.2 NVMe SSDs of any capacity.

When paired, the two systems, especially when the BAM is populated with multiple NVIDIA T4 and A100 GPUs, form a data-processing powerhouse more than capable of managing intensive AI/ML workloads at the edge.

Additional ruggedization testing for shock, vibration, and other conditions is available upon request.

NGD's Computational Storage Drives (CSDs)

NGD Systems' computational storage drives (CSDs) are the largest-capacity NVMe U.2 drives available, with up to 32TB of storage. The drives will support AES encryption, FIPS 140-2/140-3 compliance, and their in-situ processing can provide real-time results faster, offload work from memory and CPUs, and create a glorified "server within a server."

U.2 NVMe drives from most vendors don't support ruggedized platforms, creating restricted use or the need to screen drives per system. NGD's ruggedized CSDs paired with the 3U BAM Server + JBOF Storage Enclosure combo changes that.

NGD's CSDs double server capacity, reduce system power draw, offer additional data security by avoiding point-of-ingest exposure, and increase data throughput. As more and more data generation and processing are happening at the aerospace and defense edge, having high-performance, high-capacity drives to support AI workloads is becoming essential.



About Trenton Systems

[Trenton Systems](#) designs, manufactures, assembles, integrates, tests, and supports made-in-USA [rugged servers](#), [workstations](#), [processor boards](#), [PCIe backplanes](#), [storage systems](#), [blade servers](#), [PCIe expansion kits](#), [mini PCs](#), and custom high-performance computers for programs and applications operating in harsh environments worldwide.

Founded in 1989, Trenton Systems provides the defense/military, government, industrial, and commercial markets with in-house [engineering](#), [testing](#) and [support services](#), computer life cycle planning, [revision control](#), a [five-year warranty](#), and customization/configuration support.



About NGD

[NGD Systems](#) enables infrastructure success and growth by delivering the industry's most innovative [Computational Storage NVMe SSDs](#) in the largest capacity and most power-efficient storage products available. This provides an increase in system-level performance for near-real-time processing at the edge where data is generated.

Founded in 2013 with headquarters in Irvine, California, NGD Systems' breakthrough technology has fundamentally changed the IT industry by bringing compute to storage in ways never implemented before.

