BAM Servers | 3rd Gen Xeon® SP

Scalable, secure, and SWaP-C optimized with maximum storage capacity, processing power, and AI/ML/DL, our ruggedized, USA-made BAM servers are the perfect solutions to accelerate and sustain ever-evolving applications.

LEADING PERFORMANCE CPUs

Supports dual Intel® 3rd Gen Xeon® SP CPUs with hardware-based encryption for enhanced compute and networking.

HIGH-END GPUs AND FPGAs

Supports multiple double-wide, high-end Intel® and NVIDIA® GPUs and FPGAs to accelerate AI/ML/DL workloads at the edge.

FAST NVMe SSDs

Supports up to 8 high-speed NVMe or 9 SAS/SATA SSDs to increase read/write speeds (FIPS 140-2/3 available).

Overview

The BAM servers, in 2U and 3U height, provide enhanced processing, AI/ML/DL, networking, security, and storage when and where it matters most.

Supporting the latest in edge computing technology with 11x PCIe 4.0 slots, these servers are highly configurable to meet your most complex application or program needs.

Deliver enhanced performance, security, and flexibility for a wide variety of use cases across the government and defense sectors!

intel.

NVIDIA.

SOLUTION HIGHLIGHTS

Intel® PFR protects against firmware attacks using an Intel® MAX 10 Field-Programmable Gate Array (FPGA).

Intel® SGX includes predefined portions of memory that can better protect sensitive information.

Intel® TME provides encryption of a computer system's physical memory.

Strict revision control is achieved through locked BOMs and resistor-level tracking to ensure an average 11- to 15- year lifecycle.

**Counterfeit Protection Program (CPP)** helps Trenton detect, remove, and destroy counterfeit parts and components.

Vetted supply chain helps protect your system from potentially compromised counterfeit electronic parts and components.

Lifetime support gives you unlimited access to our team of experts that help troubleshoot problems and offer solutions.

TAA compliance is achieved because Trenton manufactures BAM servers, and its other solutions, in the United States.

CSfC, ITAR, ISO9001, and AS9100 adherence and compliance allow Trenton to consistently provide secure, high-quality computing solutions.
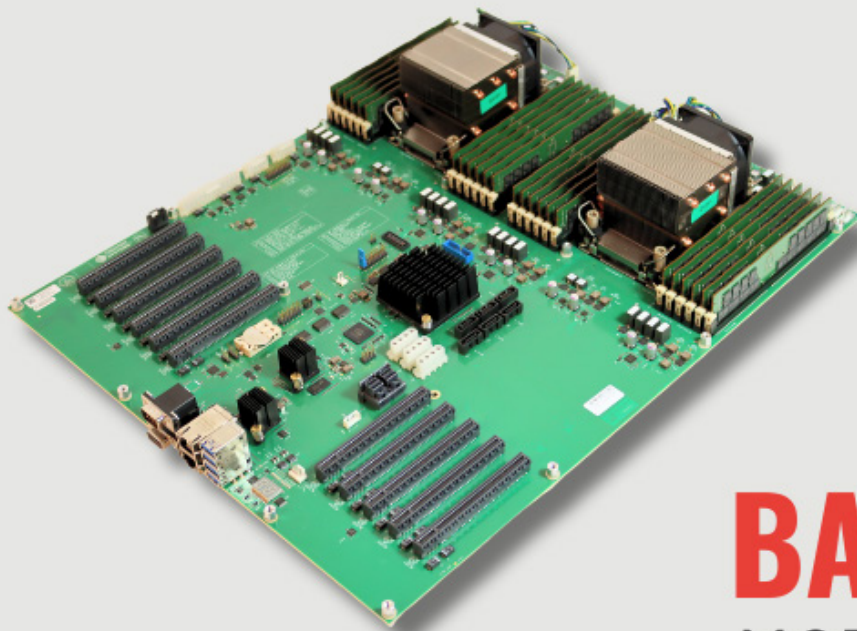
BAM8270
MOTHERBOARD

Technical Overview

SPECIFICATION	DETAILS
CPUs	Dual Intel® 3rd Gen Xeon® SP (Ice Lake)
Memory	24x high-frequency DDR4-3200 ECC RDIMM slots (12x per CPU)
Storage	Up to 8x U.2 NVMe or 9x SATA/SAS SSDs (FIPS 140-2/3 available)
Form Factors	2U/3U rack servers ranging from 20-24" depth
Network Interface	2x 1GbE ports, 1x supporting IPMI
PCIe Interconnect	Up to 11x PCIe 4.0 slots
Power	Up to 3x, up to 3000W, N+1 or non-redundant, non-461, removable

BAM Servers can be customized to your most complex technical, performance, and environmental specifications in consultation with our team. Ensure maximum reliability when and where it matters most.

Contact us for pricing and availability.

770.287.3100 | info@trentonsystems.com

TRENTON SYSTEMS®

TECH SPECS - 8270 BOARD

PROCESSORS (UP TO 36 CORES PER CPU, UP TO 72 TOTAL)

Dual Intel® 3rd Gen Xeon® Scalable Processors (Ice Lake) up to 235W
Chipset: Intel® C621 Lewisburg

If CPU 0 is populated alone, you get 5 PCIe slots. The remaining 6 slots are tied to the second CPU and will not be usable.

MEMORY (UP TO 1.5 TB)

24x DDR4-3200 ECC RDIMM slots (12x per CPU)

PCIE GEN 4 SLOTS

► Up to 11x PCIe Gen 4 x16 mechanical slots
  • 5x PCIe Gen 4x16 electrical slots
  • 6x PCIe Gen 4x8 electrical slots

I/O

► **SATA:** 6x SATA ports
► **USB:** 6x USB3 headers (2 front, 4 rear)
► **IPMI:** IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
► **Graphics:** ASPEED AST2500 VGA
► **Video:** 1x VGA port
► **LAN:** 2x 1GbE RJ-45 ports (1x Shared IPMI) driven from an Intel® i350 controller
► **Serial:** 1x RS232 serial port

SECURITY

► **TPM:** 2.0
► **Intel® & Trenton Systems Security Features:** [LINK](#)

For a comprehensive list of cybersecurity features, please contact one of our team members.

COOLING (BMC Controlled)

7x 4 pin system fan headers, 2x 4 pin CPU fan headers

SYSTEM BIOS

► InsydeH20 UEFI BIOS from Insyde
  • Plug and Play (PnP)
  • PCI 2.2
  • ACPI 1.0 / 2.0
  • USB Keyboard Support
  • SMBIOS 2.3
  • UEFI

SYSTEM MANAGEMENT (BMC)

ASPEED AST2500 baseboard management controller: rKVM, system monitoring, out-of-band management

OS COMPATIBILITY

► Windows Enterprise, Server
► Linux
  • RHEL
  • Ubuntu
  • SUSE

Contact us for the full compatabilities list

DIMENSIONS

15in. x 17in. (38.1cm x 43.18cm), Trenton Systems proprietary board

ENVIRONMENTAL SPECIFICATIONS

► Operating Temperature: 0°C - 50°C
► Storage Temperature: -20°C - 70°C
► Operating Humidity: 10% - 90% non-condensing
► Non-Operating Humidity: 10% - 90% non-condensing
► Shock: 3 axis, 20g, 11ms
► Vibration: 2.78Grms, 10Hz to 2000 Hz (SSD)
► Altitude: 0 to 10,000 ft (3,048m)
► Non-Operating Altitude: 0 to 30,000 ft (9,144m)

COMPLIANCE

Meets the following standards/certifications:
► MIL-STD-810H
► MIL-STD-1310
► MIL-STD-464C
► DO-160F
► 2014/35/EU (LVD)
► 2014/30/EU (EMC)

Environmental specifications and compliance are configuration dependent.
**Test reports and additional certifications available upon request.*

SYSTEM VARIATIONS

#	SYSTEM	BOARD	DEPTH	POWER	COOLING	STORAGE	CD/DVD	SLOTS
1	BAM21-22 (2U)	8270	22"	2X 2850W NON-REDUNDANT, NON-461, REMOVABLE	AIR FANS	UP TO 3X FRONT-REMOVABLE SATA DRIVES OR 2X FRONT-REMOVABLE U.2 NVME DRIVES (REQUIRES RAID CONTROLLER)	NO	6X HALF-HEIGHT & 1X FHFL PCIE 4.0
2	BAM21-22 (2U)	8270	22'	2X 2850W NON-REDUNDANT, NON-461, REMOVABLE	AIR FANS	UP TO 3X FRONT-REMOVABLE SATA DRIVES OR 2X FRONT-REMOVABLE U.2 NVME DRIVES (REQUIRES RAID CONTROLLER)	NO	11X HALF-HEIGHT PCIE 4.0
3	BAM32-20 (3U)	8270	20"	3X 3000W N+1, NON-461, REMOVABLE	AIR/OPT MID FANS	UP TO 6X FRONT-REMOVABLE SATA DRIVES OR 4X FRONT-REMOVABLE U.2 NVME DRIVES (REQUIRES RAID CONTROLLER)	YES	11X FHFL PCIE 4.0
4	BAM33-20 (3U)	8270	20"	3X 3000W N+1, NON-461, REMOVABLE	AIR/OPT MID FANS	UP TO 9X FRONT-REMOVABLE SATA DRIVES (REQUIRES RAID CONTROLLER) OR 6X FRONT-REMOVABLE U.2 NVME DRIVES (REQUIRES RAID CONTROLLER)	NO	11X FHFL PCIE 4.0
5	BAM38-24 (3U)	8270	24"	2X 2160W NON-REDUNDANT, NON-461, REMOVABLE	AIR/OPT MID FANS	UP TO 8X FRONT-REMOVABLE NVME U.2 DRIVES (REQUIRES RAID CONTROLLER)	NO	11X FHFL PCIE 4.0
6	1U-5U	COTS, MOTS, CUSTOM	18"-28"	LOW/MID/HIGH WATTAGE, REDUNDANT OR NON-REDUNDANT, 461-OPTIONAL, FIXED OR REMOVABLE	AIR FANS OR OPT MID FANS	SAS/SATA/NVME DRIVES (INTERNAL, FRONT-REMOVABLE, VIA RAID CONTROLLER, OR VIA RISER)	YES/NO	HALF-HEIGHT OR FHFL PCIE 3.0/4.0/5/0

If you need a different system variation not listed above, please contact a Trenton Systems engineer to configure a system or solution to your specific application or program requirements.

TRENTON SYSTEMS®