

# REAR MODULAR Blade Servers | 2<sup>nd</sup> Gen Xeon® SP

Modular Blade Servers - Rear Modular are compact, high-density solutions carrying multiple blades per chassis. Each blade houses its own CPUs, memory, storage, and networking capabilities, creating a self-contained unit that can be easily inserted or removed via the rear of the chassis.



## COMPUTE DENSITY-DRIVEN

Unlock unprecedented levels of computing power with multiple dual-CPU blades, tackling demanding workloads to achieve exceptional processing capabilities.



## MODULAR ARCHITECTURE

Scalable and consolidated computing power, maximum space utilization, and simplified management with self-contained blade modules for flexibility + performance.



## FAST NVMe SSDs

Up to 4 high-capacity, ultra-fast SSDs in a 1U or 2U bladed architecture for faster/secure data access, reduced latency, and enhanced overall system efficiency.



## Overview

1U and 2U modules and chassis in a dual CPU form factor (per blade). Each blade is rear-removable, which allows you to have application-specific flexibility to scale your hardware infrastructure as your projects evolve over time.

This feature eliminates the need to disconnect I/O cables when removing each blade for the fastest MTTR (mean-time-to-replace) on the market today!



## SOLUTION HIGHLIGHTS



**Multi-layer cybersecurity** creates a secure computing platform while enhancing resilience against sophisticated cyberthreats.



**Strict revision control** is achieved through Trenton's approved vendor list (AVL), ensuring engineer-vetted parts.



**In-house engineers** (hardware, software, mechanical, and electrical) control the design of your system down to the board and chip level.



**Five-year warranty** means we will repair, replace, or refund for any potential defects in material, workmanship, and design.



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



**TAA compliance** is achieved because Trenton manufactures Blade Servers, and its other solutions, in the United States.



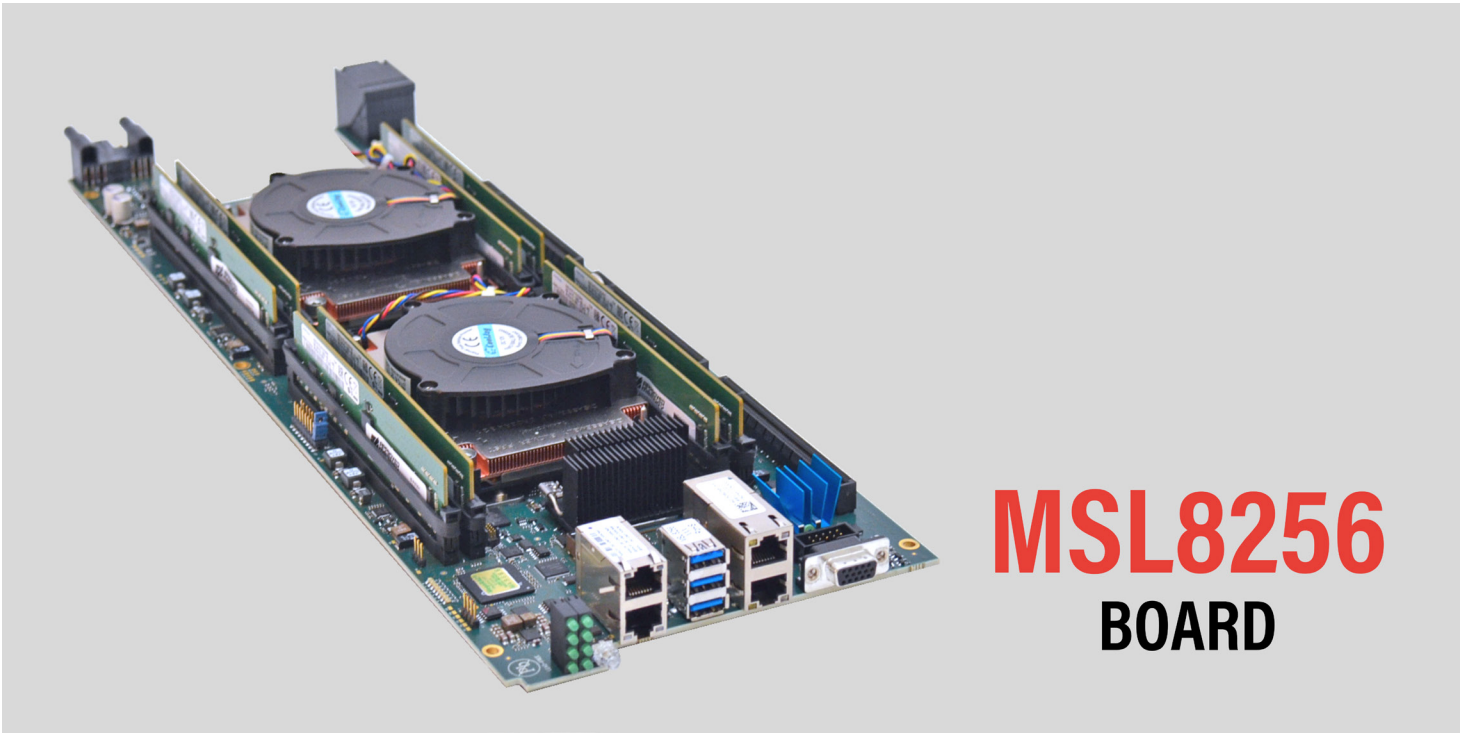
**Lifetime support** gives you unlimited access to our team of experts that help troubleshoot problems and offer solutions.



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



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



## MSL8256 BOARD

### Technical Overview

SPECIFICATION	DETAILS
CPUs	Dual 2 <sup>nd</sup> Gen Intel® Xeon® SP (Sky Lake), per blade
Memory	8x DDR4-2933 ECC RDIMMs slots (4x per CPU)
Storage	Up to 2X SATA, 4x M.2 NVMe SSDs, per blade (FIPS 140-2/3 available)
Form Factors	1U/2U rack servers ranging from 19" - 25.75" depth
Network Interface	4x 1GbE ports, 1x supporting IPMI, per blade
PCIe Interconnect	2x PCIe 3.0 x16 slots via riser card
Power	Up to 2x 1200W, redundant or non-redundant, non-461, removable

The Modular Blade Servers can be customized to your most complex technical, performance, and environmental specifications in consultation with our team.

**Contact us** for pricing and availability.

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#### PROCESSORS (UP TO 20 CORES PER CPU, UP 40 TOTAL)

Dual Intel® 2<sup>nd</sup> Gen Xeon® Scalable Processors (Cascade Lake)  
up to 125W  
Chipset: Intel® C622 Lewisburg

#### MEMORY (UP TO 1.5 TB)

8x DDR4-2933 ECC RDIMM slots, single DIMM per channel (4x per CPU)

#### PCIe GEN 3 SLOTS (CAN SUPPORT FHFL GPUs)

2x PCIe Gen 3 x16 slots via riser card

#### I/O

- ▶ **SATA:** 2x SATA ports
- ▶ **USB:** 3x USB3 via on-board header, 4x USB3 via I/O board
- ▶ **IPMI:** IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
- ▶ **Graphics:** ASPEED AST2400 BMC
- ▶ **Video:** 1x VGA port
- ▶ **LAN:** 4x 1GbE RJ-45 ports, 2x driven from a dual Intel® i350 controller, 2x driven from a dual Intel® i210 controller (1x Shared IPMI)
- ▶ **Serial:** 1x RS232 serial port

#### SECURITY

##### ▶ TPM 2.0

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

#### COOLING (BMC Controlled)

6x 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 AST2400 baseboard management controller: rKVM, system monitoring, out-of-band management

#### OS COMPATIBILITY

- ▶ Windows Enterprise, Server
- ▶ Linux
  - RHEL
  - Ubuntu
  - SUSE

\*Contact us for the full compatibilities list

#### DIMENSIONS

6.18 in. x 17.6 in. (15.7 cm x 44.7 cm)

#### ENVIRONMENTAL SPECIFICATIONS

- ▶ Operating Temperature: 0°C - 40°C
- ▶ Storage Temperature: -40°C - 70°C
- ▶ Operating Humidity: 8% - 90% non-condensing
- ▶ Non-Operating Humidity: 5% - 95% non-condensing
- ▶ Shock: 3 axis, 35g, 25ms
- ▶ Vibration: 4.76Grms, 10Hz to 2000 Hz (SSD)
- ▶ Altitude: 0 to 10,000 ft (3,048m)
- ▶ Non-Operating Altitude: 0 to 30,000 ft (9,144m)

\*Preliminary numbers noted. Final numbers expected to outperform current specifications.

\*Conformal coating available upon request.

#### COMPLIANCE

Designed to meet 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 apply within Trenton 1U/2U chassis.

#### SYSTEM VARIATIONS

#	SYSTEM	BLADES	BOARD	DEPTH	POWER	STORAGE	SLOTS
1	MBS1001 (1U)	UP TO 2X 1U, DUAL-CPU BLADES	8256	19"	1X 1200W NON-REDUNDANT, NON-461, REMOVABLE	UP TO 4X M.2 NVME DRIVES VIA OPTIONAL RISER (PER BLADE)	---
2	MBS1002 (1U)	1X 1U DUAL-CPU BLADE	8256	19"	1X 1200W NON-REDUNDANT, NON-461, REMOVABLE	UP TO 2X FRONT-REMOVABLE SATA DRIVES	2X FHFL PCIe 3.0 X16 VIA RISER CARD
3	MBS2000 (2U)	UP TO 4X 1U, 2X 2U, OR 1X 2U, 2X 1U DUAL-CPU BLADES	8256	19"	2X 1200W, NON-461, REMOVABLE (REDUNDANCY DEPENDS ON NUMBER OF BLADES)	2X OR 4X M.2 NVME DRIVES VIA PCIe RISER (DEPENDENT ON BLADE SELECTION)	2X FHFL PCIe 3.0 X16 VIA RISER CARD (DEPENDENT ON BLADE SELECTION)
4	MBS2001 (2U)	UP TO 4X 1U, 2X 2U, OR 1X 2U, 2X 1U DUAL-CPU BLADES	8256	25.75"	2X 1200W, NON-461, REMOVABLE (REDUNDANCY DEPENDS ON NUMBER OF BLADES)	UP TO 2X FRONT-REMOVABLE SATA DRIVES (PER BLADE), 2X OR 4X M.2 NVME DRIVES VIA PCIe RISER (DEPENDENT ON BLADE SELECTION)	2X FHFL PCIe 3.0 X16 VIA RISER CARD (DEPENDENT ON BLADE SELECTION)
5	1U-2U	1U AND 2U SINGLE- OR DUAL-CPU BLADES	COTS, MOTS, CUSTOM	18"-28"	LOW/MID/HIGH WATTAGE, REDUNDANT OR NON-REDUNDANT, 461-OPTIONAL, FIXED OR REMOVABLE	SAS/SATA/NVME DRIVES (INTERNAL, FRONT-REMOVABLE, VIA RAID CONTROLLER, OR VIA RISER)	HALF-HEIGHT AND 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.

