Multi-Node Servers | 3rd Gen Xeon® SP

Compact, high-density solutions carrying two fixed segments per chassis. Each segment houses its own CPUs, memory, and networking capabilities to quickly process, retrieve, and transfer data in the face of ever-evolving workloads.

MAXIMUM COMPUTE POWER

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

SWAP-C OPTIMIZED

Consolidated computing power and maximum space utilization within a multi-node architecture greatly reduce hardware costs while enhancing performance.

RUGGEDIZED FOR EXTREMES

Certified to the most stringent military and industrial standards, rapidly deploy reliable and resilient computing systems within harsh and austere environments.

Overview

1U chassis with two fixed, dual CPU segments. Each segment has a fixed and customizable I/O board which allows you to have application-specific flexibility to scale your hardware infrastructure as you projects evolve over time.

Run multiple applications on the same piece of hardware to reduce compute footprint and total cost of ownership. Each segment functions like a half-rack server, essentially giving you two systems in one!

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® Total Memory Encryption provides encryption of a computer system's physical memory.

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

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.

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

TAA compliance is achieved because Trenton manufactures Multi-Node Servers, and its other solutions, in the United States.

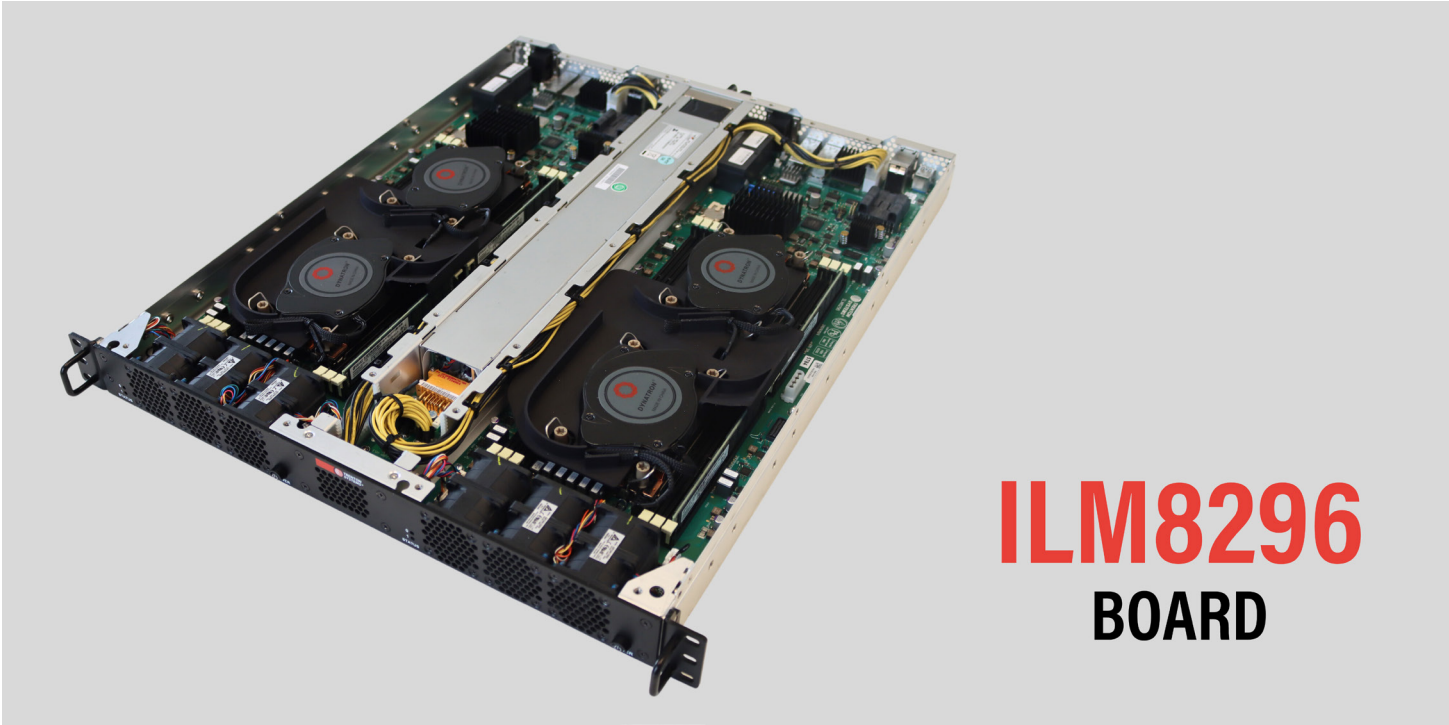**CSfC, ITAR, ISO9001, and AS9100 adherence and compliance** allow Trenton to consistently provide secure, high-quality computing solutions.

ILM8296
BOARD

Technical Overview

SPECIFICATION	DETAILS
CPUs	Dual Intel® 3rd Gen Xeon® SP (Ice Lake), per segment
Memory	12x DDR4-3200 ECC RDIMM slots (6x per CPU)
Form Factors	1U rack server (19" x 1.75" x 21.5" | 48.26cm x 4.44cm x 54.61cm)
Network Interface	2x 1GbE ports, 1x supporting IPMI, 2x 10GbE ports, per segment
Power	1x 1200W, non-redundant, 461-filtered, removable

The Multi-Node 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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TRENTON SYSTEMS®

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

Dual Intel® 3rd Gen Xeon® Scalable Processors (Ice Lake) up to 185W
Chipset: Intel® C621 Lewisburg

MEMORY (UP TO 1.5 TB)

12x DDR4-3200 ECC RDIMM slots, single DIMM per channel (6x per CPU)

I/O

- ► **USB:** 2x USB2 via on-board header, 2x USB3 via I/O board
- ► **IPMI:** IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
- ► **Graphics:** ASPEED AST2500 BMC
- ► **Video:** 1x VGA port
- ► **LAN:** 2x 1GbE RJ-45 ports (1x Shared IPMI) driven from a dual Intel® i350 controller, 2x 10GbE SFP+ ports driven from a dual Intel® x710 controller
- ► **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 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

Board: 6.85". x 18.46" | 17.4cm x 46.9cm

Chassis: 19" x 1.75" x 21.5" | 48.26cm x 4.44cm x 54.61cm

ENVIRONMENTAL SPECIFICATIONS

- ► Operating Temperature: 0°C - 40°C
- ► Storage Temperature: -20°C - 70°C
- ► Operating Humidity: 5% - 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-461G
- ► MIL-STD-1310
- ► MIL-STD-464C
- ► DO-160F
- ► 2014/35/EU (LVD)
- ► 2014/30/EU (EMC)

Environmental specifications and compliance apply within Trenton 1U chassis.

SYSTEM VARIATIONS

#	SYSTEM	BLADES	BOARD	DEPTH	POWER
1	1U MULTI-NODE SERVER	UP TO 2X 1U DUAL-CPU BLADES	8296	21.5"	1X 1200W, NON-REDUNDANT, 461-FILTERED, REMOVABLE
2	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

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®