

Owl x Trenton Systems Rugged CDS

Maximum Compute. High Assurance. Mission-Tested.

Key Features & Benefits

- Meets the U.S. Government's rigorous Raise the Bar standards for Cross Domain Solutions.
- Deployable across any compliant low-SWaP rugged platform.
- Flexible schema management via Apache Daffodil enables direct operator control over data flows.
- Validated for cross domain voice, FMV, XML, TAK/CoT, VoIP, and RoIP.
- The combined Owl CDS and Trenton rugged solution is scheduled to undergo Raise the Bar (RTB) certification in 2026.

Supported Dataflows

- Voice, Voice over IP
- Radio over IP
- Full-Motion Video
- Structured Data
- Text Chat
- Team Awareness Kit
- Cursor-on-Target

Supported Platforms

- Trenton Systems Dual-Node Rugged Server (TRS-10-22MX2)



Figure 1: Trenton Systems Dual-Node Rugged Server (TRS-10-22MX2)

The Trusted CDS Standard: Now Deployable at the Edge

For nearly three decades, Owl Cyber Defense® has led cross-domain security, delivering adaptable CDS solutions for the most demanding defense and intelligence missions.

Recognizing the need for rugged deployments in extreme environments, Owl has partnered with Trenton Systems to integrate high-performance compute and expand market reach. Building on this foundation, Owl Rugged CDS extends its proven software architecture, featuring high-assurance data pipelines, intuitive management, flexible schema handling with Apache Daffodil, and data routing via Apache NiFi, across Trenton Systems® validated low-SWaP platforms, enabling secure, real-time data transfer across classification levels wherever the mission requires.

Owl V2CDS™: The Engine Behind Every Cross-Domain Connection

Owl's **V2CDS** delivers point-to-point voice, VTC, FMV, streaming audio, and XML/binary structured data across network security boundaries using existing infrastructure, with dedicated performance per connection. With numerous security and authentication features and an exclusive assured pipeline architecture for voice and video content filtering, V2CDS mitigates covert channels to an acceptable risk level while enabling real-time collaboration between secure or classified network domains. V2CDS also leverages DFDL-based structured data schemas and Apache MiNiFi to enable direct operator control over data flows.

Trenton Systems® Dual-Node Rugged Server: High-Density Compute. High-Assurance CDS.

The Trenton Systems Dual-Node Rugged Server (TRS-10-22MX2) is a 1U, dual-node, dual-CPU platform purpose-built for the most demanding military and security applications. Designed and manufactured in the USA for complete supply chain control, the TRS-10-22MX2 delivers high-density compute in an industry-leading compact 21.5" depth chassis. Each node houses its own CPUs, memory, and networking capabilities to rapidly process, retrieve, and transfer data across ever-evolving mission workloads. Compliant with MIL-STD-810H, MIL-STD-461G, MIL-STD-1310, MIL-STD-464C, and DO-160F, the TRS10-22 is engineered to perform in the harshest deployed environments.

Technical Specs: ILM8296 Board

SPECIFICATION	DETAILS
CPUs	Dual Intel® 3 rd 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



Technical Specs: TRS10-22 System

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

CPU: Dual Intel® 3rd Gen Xeon® Scalable Processors (Ice Lake) 4316T 20C/40T, 150W, capacity up to 185w
Chipset: Intel® C621 Lewisburg

MEMORY (UP TO 1.5 TB)

RAM: 8x DDR4-3200 32GB ECC RDIMM
Capacity up to 12 slots, 6 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® X540 controller, 2x 10GbE SFP+ ports driven from a dual Intel® x710 controller
Serial: 1x RS232 serial port

STORAGE AND NETWORK

Storage: 4x 960GB U.2 GEN4 PM9A3 7MM SAMSUNG 2.5" SSD DRIVES
Network: 4x 10GbE transceivers

SECURITY

TPM: 2.0 Infineon 9670 Rev 1.2

POWER

SUPPLIES: 1200W AC NON-REDUNDANT w/MIL-STD-461

COOLING (BMC CONTROLLED)

6x CR dual stack 4 pin system fans, 2x 4 pin CPU fans
2x CPU heatsink with vapor chamber base

SYSTEM BIOS

InsydeH20 UEFI BIOS

- Plug and Play (PnP)
- USB Keyboard Support
- PCI 2.2
- SMBIOS 2.3
- ACPI 1.0 / 2.0
- 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

DIMENSIONS

Chassis: 19"x 1.75"x 21.5" | 48.26cm x 4.44cm x 54.61cm
Weight: 26-28 lbs

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature: 0°C - 40°C P
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)

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)
- 2014/30YEU (EMC)

**Environmental specifications and compliance are configuration dependent.*

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Owl Cyber Defense Solutions, LLC, headquartered in Columbia, MD, leads the industry in data diode and cross-domain network cybersecurity solutions for faster, safer and smarter decision making. We create solutions tailored for high-risk sectors including the military, government and critical infrastructure. Our advanced technologies enable secure, near-instantaneous collaboration, bridging network barriers to protect critical missions. With a focus on scalability and interoperability, Owl ensures that organizations can maintain secure, reliable, and compliant communication channels against evolving cyber threats.

For more information on Owl, or to schedule a demo, visit www.owlcyberdefense.com.

