

RES Trust 1U



20" Deep, 4 Drive, Rear I/O Rugged Secure Server

- RoT enforced boot and configuration management
- Cyber-resilient BIOS, composable security features
- Dual Intel Xeon E5-2618L v4 processors up to 14 cores
- Field proven, approved design
- MIL-STD: 810G, 901D, 167-1, 461
- Designed, manufactured, and tested in the U.S.



A part of the *EnterpriseSeries™* product line, Mercury's RES Trust 1U server employs a U.S. designed and manufactured motherboard with embedded Intel® processors and composable *BuiltSECURE™* framework to deliver trusted performance for the most security-imperative mission critical applications.

Secure Boot

Featuring a U.S. made ATX-style motherboard with **built-in security features**, up to 120TB of storage in four disk drives, high speed I/O, expansion slots, and enhanced reliability features, RES Trust 1U provides trusted performance, improved interoperability, and flexibility for current and future system requirements. A hardware-based Root of Trust and cyber-resilient BIOS mitigate multiple security threats to the application, in part, by reducing the available attack surfaces to minimize boot devices. Built-in interfaces allow servers to participate in platform-wide security architectures.

Trusted Manufacturing

Board support packages, BIOS, and network stacks are maintained by U.S. personnel and available for inspection by government agencies. Motherboards are manufactured and tested in **DMEA-accredited** facilities; minimizing the risk of back doors, counterfeits, and trojans.

Trusted Supply Chain

A trusted supply chain is utilized for both hardware and software. Servers are designed to help system integrators meet U.S. Department of Defense (DoD) instruction 5200.44 "Protection of Mission Critical Functions to Achieve Trusted Systems and Networks."

BuiltSECURE™ Integrity

RES Trust servers can be configured with a variety of nation-state-level security features. Deployed on over **four generations of Intel® microarchitectures**, our BuiltSECURE security suite includes access control, key management, non-volatile memory write protection, data-at-rest protection, sanitization, secure firmware management, physical protection mechanisms, sensors, and cryptographic offload engine capabilities that **mitigate reverse engineering** and provide cyber resiliency.

System security features enable customer Foreign Military Sales (FMS) or Direct Commercial Sales (DCS) program success. Detailed security capability offerings can be requested.

Mercury Systems is a leading commercial provider of secure sensor and safety-critical processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



ACQUIRE



DIGITIZE



PROCESS



STORAGE



EXPLOIT

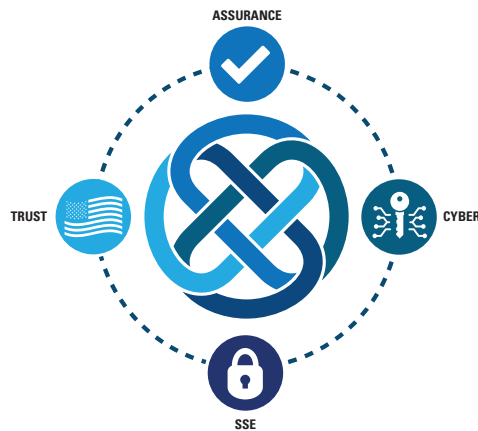


DISSEMINATE



Affordable Composable Security

As threats arise, our extensible security architectures are built to evolve for future-proofing to maintain system-wide integrity. Architectures can be utilized across processor generations, preserving security development to **reduce overall cost** and program risk.



Subject Matter Expertise

Mercury's experienced system security engineers and customer support teams deliver end-to-end product security support services including vulnerability assessments, technical training, classified RMA capabilities, and product-specific protection schemes. With over two decades of delivering **System Security Engineering (SSE)** solutions, Mercury teams with customers to develop affordable systems that safeguard against present and emerging threats.

Secure Virtualization

The RES Trust motherboard addresses threat vectors from the moment of power-on until a secure OS, hypervisor, or application is running. A multi-platform compatible, embedded hypervisor option configures and controls both hardware resources and software execution to further guard against cyberattacks and reverse engineering with **secure boot**, just-in-time decryption, mandatory access control, OS hardening, and runtime software protections.

Data-at-Rest Protection

Optional ASURRE-Stor secure solid state drives deliver data at rest protection for the NSA's Commercial Solutions for Classified (CSfC) program as the only hardware full disk encryption device on the approved components list. Designed and manufactured in one of Mercury's many domestic Advanced Microelectronics Centers, ASURRE-Stor secure storage devices seamlessly integrate **FIPS 140-2** and NIAP certified cryptographic algorithms with user-configurable key management and sanitization protocols that can **purge encryption keys** in <30ms.

Designed for the Field

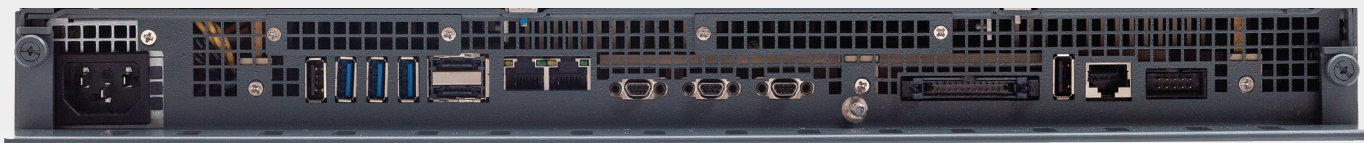
Optimized for size, weight, and power (SWaP), the system weighs **34lbs**, is **20"** deep, and meets military environmental specifications. To further enhance reliability, the system removes socketed components and **solders processors and memory** directly to the motherboard—eliminating disconnect during shock events. The motherboard itself meets IPC-6012 and MIL-STD-810G specifications. RES Trust advanced thermal and mechanical design features provide superior resilience to vibration, shock, dust, sand, and temperature extremes.

Proven Performance

Mercury's EnterpriseSeries RES Servers are trusted worldwide for their high-performance, **long life cycles**, thermal resiliency, compatibility with industry standards, and **SWaP optimization**. With the latest Intel core-count processors and configurable I/O, RES servers are ideally suited to next-gen radar, mission, advanced simulation, command, control, and battle management processing mission critical applications.

Your Reliable Teammate

With over 30 years of technical expertise Mercury Systems works closely with customers to design trusted computing solutions that are easy to integrate, affordable, and reliable for years to come. Mercury's MIL-PRF-38534 Class H/K, MIL-PRF-38535 Class Q, ISO 9001:2015 and AS9100 facilities maintain quality and inspection compliance.



Technical Specifications

2 Intel® Xeon® E5-2618L v4 processors with up to 14 cores per processor
2 QPI up to 8 GT/s
Up to 128GB DDR4 2133MHz memory
Intel® Trusted Execution Technology with integrated TPM 2.0

Management and Operating System

BIOS: Mercury coded and supported
Mercury maintained Cyber Resilient Baseboard Management Controller
Red Hat® Enterprise Linux® v7 support
Secure Crucible Defense Hypervisor and Titanium Linux Option

BuiltSECURE™ Embedded Framework

Built-in composable security feature set options

Expansion and Modular Maintainability

Up to 2 PCIe 3.0x16 cards, half-height half-length
5 Fixed Fans

Input/Output Versatility

Front Access

- 4 Removable, Hot Pluggable, 2.5" SATA drives
 - SAS3, U.2 NVME storage with RAID option available via PCIe
 - Optional secure storage with military-grade data protection
- 1 CD/Bluray drive
- 1 Power Switch

Rear Access

- 2 RS-232 Serial Interfaces
- 2 10/100/1000GBaseT Ethernet Ports (RJ45)
- 3 USB 3.0
- 1 USB 2.0
- 1 IPMI 2.0

Power Supply Options

Single 550W AC Power Supply 100V-240V VAC (47/63Hz, 8-4Amps)

Environmental*

Operating

Temperature: 0°C to 50°C
Humidity: 8% to 95% (non-condensing)
Shock: 3 axis, 35g, 25ms
Vibration: 4.76Grms, 10Hz to 2000 Hz (SSD)

Non-Operating

Temperature: -40°C to 70°C
Humidity: 5% to 95% (non-condensing)

Additional Options

Shock Pins
Front Door Filter
Slide Rails
Tamper-Evidence Features

Mechanical

Height: 1U or 1.75" inches (44.45mm)
Width: 17 inches (433.3mm)
Depth: 20 inches (508mm)
Weight (Typical)*: 33.7 pounds (15.3kg)
19" rackmountable

* Mercury Systems designs all products to meet or exceed listed data sheet specifications. Some specifications including I/O profiles, weight, and thermal profiles are configuration dependent. Contact Mercury for information specific to your desired configuration requirements.

Custom Expertise

For tailor-made systems with specific security and environmental requirements email tms@mrchy.com

WARNING: "600 Series" and/or National Security Controls - These commodities, technology, or software are controlled for export from the United States in accordance with the Export Administration Act of 1979 as amended (Title 50 U.S.C.; App. 2401, et seq.), through the Export Administration Regulations (EAR). Transfers to foreign persons requires prior approval from the U.S. Department of Commerce, Bureau of Industry and Security.

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