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News Release

General Micro Systems Brings Security with Speed, Trusted Virtual Clients, Encrypted RAID Storage to Military Applications in Ultra-Compact 1U Rackmount Secure Storage Server

The "Hurricane" Can Replace 12 to 24 Separate Computers With Removable Encrypted RAID Storage in only 1U, with Software Certified "Trusted" By NSA, DoD

RANCHO CUCAMONGA, Calif., Feb. 2, 2018 – In a world full of cyber-security dangers that threaten the safety of soldiers and civilians alike, every user and application on the battlefield needs to protect classified data and ensure that critical systems aren't compromised in any way. To solve these dual problems, General Micro Systems, Inc. (GMS) today announced a thin 1U rackmount *secure storage server* with removable, hardware-encrypted RAID modules that also serves up to 12/24 trusted and segregated thin clients with the highest levels of security, encryption and crypto key control available. Equally important is the secure storage server's best-in-class performance—the only rugged server to marry *five* leading-edge technologies together in one secure high-speed storage system.

5 Key Benefits of S1U401-SHS
Secure Storage Server

- Encrypted high-speed storage: removable encrypted media enables in-the-clear transport of classified material
- Industry's fastest, newest NVMe SSDs with PCIe Gen 3 fabric means fastest data movement from sensor and network to storage
- Separate, individual trusted virtual machines: Common Criteria and accredited VMs completely segregate users on private LANs
- RAID and redundancy prevents data loss: speed is coupled with fault tolerance, isolating and replicating critical encrypted data between one, two, or multiple on-board storage groups at the drive or cartridge level.
- Built-in auxiliary power unit with MIL-SPEC power and charging alleviates separate APU and saves space.

The "Hurricane" S1U401-SHS Secure High-Speed Storage Server is ideal for the Navy's and Marines' shipboard op centers and command/control; the Army's multi-domain battlefield and command networks; and the Air Force's airborne C4ISR platforms, all of which require the most secure and highest performing technologies in the smallest yet most rugged form factors possible.

"The Hurricane secure storage server is five exceptional systems in only 1U." said Ben Sharfi, CEO and chief architect, GMS. "There is dual cartridge RAID mass storage and hardware encryption, plus Intel's best PCI Express Gen 3, 22 core Xeon® E5 server CPU, along with a segregated Ethernet thin client LAN server for trusted clients. It's simply the best of the best for rugged, space-constrained applications, and at a lower cost than many would pay for the just the server alone."

The S1U401-SHS "Hurricane" includes:

1. A svelte 1U rackmount "flash server" that uses Intel®'s best 22 core Xeon® E5 v4 server CPU, coupled with nearly 50 PCIe 3 lanes, each operating at the industry's fastest 8 Gbits/s to move data between the drives, CPU, and Ethernet ports with an astonishing total system bandwidth of 376 GT/s (~0.4 Tbits/s). This closely-coupled architecture assures the fastest direct-to-disk server on the market. To put it in perspective, this system bandwidth is nearly four times faster than the Hurricane's dual 40Gb Ethernet ports and 12x/24x 1Gb Ethernet ports *combined.*
2. An encrypted, removable, high-speed storage using direct-to-disk Non-Volatile Memory (NVMe) drives that connect directly to the CPU via the PCIe 3 fabric. There are two removable, hardware-encrypted, 8-drive redundant RAID cartridges supporting up to 128 TB of mass storage with either SSD or NVMe drives. Each encrypted cartridge can be removed to transport data in the clear to another system. As well, there are four individual drives that support RAID and hardware encryption. The total of 20 drives can be configured for redundancy in RAID groups 0, 1, 5, 10, 50—or in any combination needed for fault tolerance. Should a drive or group of drives fail—data is protected, encrypted, and most importantly, recoverable.
3. A high-speed Ethernet subsystem, which supports Common Criteria, non-hackable, trusted and accredited Forcepoint Trusted Thin Client architecture for 12 or 24 simultaneous, independent, secure isolated clients. A single endpoint at S1U401-SHS connects to multiple networks or clients via virtualization. When users run Forcepoint software, the system meets UCDSMO (Unified Cross Domain Services Management Office), TSABI (Top Secret Sci and Below Interoperability), JIE (Joint Information Environment) and SABI (Secret and Below Interoperability). Dual 40Gb Ethernet ports provide inter-shelf or inter-rack connectivity to other servers or high-speed LAN pipes.
4. MIL-SPEC power supplies for AC/DC operation, along with an auxiliary power unit (APU) for battery back-up long enough to assure orderly shutdown to prevent data loss.

In addition to the server's individual features, the overall S1U401-SHS system with RAID drive cartridges is ideal for collecting and storing over 160 TB of secure data via 20 encrypted and RAID-capable drives.

"Although S1U401-SHS has 20 solid-state drives and 14 to 26 Ethernet ports, it is not a network attached storage (NAS) device, which operates at relatively slow network speeds," Sharfi added. "Instead, this high speed secure storage server, which has the encrypted drives closely coupled to the CPU, its four times faster than the network connections. This allows the system to act on the data if needed for analysis or processing without slowing down the system throughput." Compared to competing storage products such as CheetahRAID®, Hurricane S1U401-SHS is a more compact solution, offering more functionality per rack shelf with higher internal total system throughput.

- For more information regarding GMS products, please visit: www.gms4sbc.com
- Additional S1U401-SHS press materials can be found at: http://www.gms4sbc.com/press/S1U401-SHS/datasheet
- High resolution product photos available at: http://www.gms4sbc.com/press/S1U401-SHS

GMS will showcase the new system at West 2018 in San Diego on Feb. 6-8.
Come see us at booth 1841.

About General Micro Systems:
General Micro Systems (GMS) is the industry expert in highest-density, modular, compute-intensive, and rugged small form-factor embedded computing systems, servers, and switches. These powerful systems are ideal for demanding C4ISR defense, aerospace, medical, industrial, and energy exploration applications. GMS is an IEC, AS9100, NIST-800-171, and MIL-SPEC supplier with infrastructure and operations for long-life, spec-controlled, and configuration-managed programs. Designed from the ground up to provide the highest performance and functionality in the harshest environments on the planet, the company's highly customizable products include GMS RuggedDNA™ with patented RuggedCool™ cooling technology, plus the SecureDNA™ security suite for zeroizing data with Source-Safe™ BIOS control. GMS is also the leader in deployable high-end Intel® processors and a proud Intel® partner since 1986. For more information, visit www.gms4sbc.com