![GMS Computing Engines logo — General Micro Systems, Inc. Trusted and Deployed Since 1979]

News Release

General Micro Systems' (GMS) Introduces "Goliath": Compact, Rugged Scalable Xeon® 168TB NAS Server with GPGPU Artificial Intelligence

Compact and rugged, "Goliath" 16-inch deep short rack server is the smallest available with dual CPUs, 22 drives, six PCIe Gen 3 slots, artificial intelligence, and dual-redundant PSUs.

San Diego, CA, March 2, 2020 – The new General Micro Systems (GMS) "Goliath" 1U and 2U short rack servers are compact and rugged—*only 16-inches deep*—and ideal for shipboard and sub-surface high-performance applications that are space-constrained. Using the latest Intel® Scalable Xeon® server and Nvidia® GPGPU AI co-processors, "Goliath" is a marvel of systems engineering, packing over 4U worth of server and AI functions in only 1U or 2U. This saves size, weight, power, and cost (SWaP-C) for NAS, recorder, data mining and sensor fusion applications, or naval afloat system upgrades.

Where most full-featured servers are 19-, 22-, or 24-inches deep, Goliath servers are a mere 16-inches deep. The rugged servers can be placed in tight locations such as submarines, close to curving walls or doorways, in narrow-body anti-submarine warfare (AWS) aircraft, or tucked tightly to bulkheads in companionways on smaller ships and surface vessels. Despite their small size, the dual-socket, twin Scalable Xeon servers use Intel's latest server processors: Gold/Platinum up to 24 cores (embedded SKUs) or 28 cores (server SKUs) with each CPU addressing up to 1 TB of ECC DDR4 memory. They also accommodate one or two Nvidia V100 200+ TFLOPS GPGPU AI co-processors.

Unique to Goliath servers are the five (in 2U) secure, removable storage cartridges designed for sensor data recording or network-attached storage (NAS) applications. Each cartridge holds four SAS/SATA/NVMe Gen 3 SSDs, for a total of 20 drives plus two internal M.2 fixed SSDs. A 2U Goliath has 22 SSDs and 168 TB of storage using 8 TB media (denser SSDs will dramatically increase Goliath's total storage). Hardware and software RAID plus dual gigabit Ethernet or optional 10/40 GbE networks stream data to/from the array at full sensor speeds—making Goliath a decisive real-time sensor data processor and recorder.

"We've seen the competition, and don't know why they waste so much space and weight," said Ben Sharfi, CEO and chief architect at GMS. "There is no other Scalable Xeon server with so much storage, memory, AI processing, add-in I/O or raw performance, in such a small package with the latest of every conceivable server technology. If size or weight is the concern, Goliath is the only choice—and it's the best choice."

Using GMS' proven RuggedDNA™ cooling, packaging, and ruggedization techniques carried forward from 30 years of deployed VME, VPX and small form-factor systems, Goliath servers

are value-engineered for extended temperature, high shock and vibration, while still serving the lower price points expected for better-than-benign naval applications. The servers can operate over a wider -20 °C to +55 °C temperature range while offering the security and long-life expected for DoD applications.

Three Versions: Designed in America
Goliath is designed in America with the same design ethos as the company's successful MIL-SPEC conduction-cooled TITAN 1U and 2U servers, or deployed conduction-cooled small form factor (SFF) chassis and systems. But in Goliath, TwoCool™ BMC-controlled fans mitigate heat reliably while keeping costs down. Optional features like zeroize via GMS SecureDNA™ or hardware secure erase via FIPS-140 or Opal 197 drives, allows for crypto data-at-rest on the removable SSD cartridges. A typical use case allows an encrypted 32 TB data cartridge to be moved physically between operator locations—such as between an airborne platform and a ground-based analyst station. Goliath-NAS holds five removable cartridges.

Goliath servers come in three versions:
- Goliath-X is a 16-inch 1U variant with a single removable 4-drive cartridge, dual CPUs, two PCIe Gen 3 slots, and one optional Nvidia GPGPU.
- Goliath-NAS is a 16-inch 2U variant designed for NAS systems with 22 total drives and five removable cartridges. There are up to six add-in slots, and two Nvidia GPGPU AI engines can be installed for "tip of the spear" battlefield edge processing.
- Goliath-AI is a 16-inch 2U variant that dedicates the add-in slots to dual GPGPUs and on-platform processing.

All Goliath variants have 2x 1GbE LAN ports, console video, eSATA for external drive arrays, optional hardware or software RAID, a BMC with dedicated Ethernet port and TPM, and optional 10/40 GbE (copper or fiber). A DVD/Blu-ray drive is optional, as are serial ports and audio I/O. Chassis use GMS' "egg crate" RuggedDNA™ techniques for superior shock and vibration tolerance, and operating temperature is -20 °C to +55 °C. Single- or dual-redundant power supplies are standard, in 110VAC or 220VAC, plus select DC voltages.

- High-resolution images Goliath-X
- High-resolution images Goliath-NAS
- High-resolution images Goliath-AI
- Datasheet Goliath-X
- Datasheet Goliath-NAS
- Datasheet Goliath-AI
- Press release "Goliath"

Where: Booth #123, AFCEA West Premier Sea Services event, San Diego, March 2-3, 2020

For interviews at the show, contact Kelly Wanlass at 801-602-4723 or kelly@hughescom.net, or GMS CTO Chris Ciufo at (360) 921-7556 or cciufo@gms4sbc.com

###

About General Micro Systems:

General Micro Systems (GMS) is the rugged server company. The company is known as 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, ISO, 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 Rugged DNA™ with patented RuggedCool™ cooling technology. 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.

General Micro Systems and the General Micro Systems logo are trademarks of General Micro Systems, Inc. All other product or service names are the property of their respective owners.