GAP-251R-S7 Series
2U RUGGED SERVER

3rd Gen Intel® Xeon® Scalable Processors

Rear I/O - Rear Power Supply





2U	510 mm	2	4TB	9	6
Platform	Depth	CPU	RAM	Hot Swap SSD	I/O Boards

GAP is a family of rugged servers and workstations with an aluminum construction, designed for applications that require robust and qualified MIL-GRADE equipment, suitable for operations in critical environments.

GAP-251R-S7 rugged servers feature dual socket 3rd Gen Intel® Xeon® Scalable Processors (Ice Lake), a balanced architecture that delivers built-in AI acceleration and advanced security capabilities, up to 64 lanes PCI Express Gen 4 per socket to enable higher I/O bandwidth per core, and +7% higher socket-to-socket bandwidth. The integrated IPMI services support monitoring, control, and management functions sending alarm notifications in case of critical events.

GAP-251R-S7 are designed for 19" rackmounting and have a 2U chassis with a total overall lenght of 540mm. The 19" front bracket of the chassis is mounted in backward position so that it takes only 510mm once installed into a cabinet.
The rear I/O and rear power supply layout includes dual internal M.2 NVMe socket and up to six removable U.2 NVMe SSD or up to nine removable 2.5" SAS/ SATA SSD. Optionally a DVD media is available.
GAP-251R-S7 rugged servers can host up to two OCP 3.0 compliant NIC cards with PCIe 4.0 bandwidth and a tool-less, hot-swappable design, supporting GbE / 10GbE / 25GbE / 100GbE in RJ45 or SFP version. Furthemore it can accomodate six PCIe cards.
Additional boards can be provided with a dedicated retainer kit for an optimal protection against shocks and vibrations also during transport.

GAP servers are designed to meet MIL-STD-810F for temperature and shocks, MIL-STD-167-1A for vibrations. Optionally, they can conform to MIL-STD-461 for EMI /EMC. The I/O connectors and the power supply input can be provided with MIL-GRADE connectors upon request.

All units are delivered with their inventory list to ensure configuration control and reproducibility over time. Upon request, all server configurations can run specific thermal or mechanical environmental stress test.

FEATURES

- 2U Rugged Server - 510mm depth
- Dual Socket Motherboard
- 3rd Gen Intel® Xeon® Scalable Processors
- Rear I/O connectors and rear Power Input
- Redundant AC or DC Power Supply
- 6 x U.2 NVMe SSD or 9 x 2.5" SATA/SAS SSD
- Optional DVD
- Up to 6x PCIe 4.0 cards or 2x double-width GPUs and 2x PCIe cards
- Optional Conformal Coating
- MIL-STD-810G
- Optional MIL-STD-461

Technical Specifications

System

CPU	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) max 270W TDP
Memory	Up to 4TB ECC RDIMM, DDR4-3200MHz; 16 DIMM slots
Chipset	Intel® C621A
Graphics	ASPEED AST2600 BMC
Network Connectivity	1x Dedicated IPMI LAN port Up to 2x Dual or Quad port GbE/10GbE/25GbE/100GbE OCP NIC 3.0 with RJ45 or SFP connectors
Storage	Internal: 2x M.2 NVMe; M-Key, 2280 1x Disk on Module Removable: Up to 6x U.2 NVMe SSD or up to 9x 2.5" SATA / SAS SSD
TPM	1x TPM Header
Motherboard I/O shield	Available on the rear: 1x VGA, 2x USB 3.0, 1x IPMI LAN; 1x COM
Expansion slots	Up to 6x PCIe 4.0 cards or 2x double-width GPUs and 2x PCIe cards.
Operative Systems	Windows® 10 IoT Enterprise 64bit, Windows® Server 2016 64bit; Windows® Server 2019 64bit; RHEL 8.4 64bit; Ubuntu 20.04.2 LTS SVR 64bit; CentOS 7.9 64bit
IPMI	IPMI2.0, SPM, Watchdog; SNMP and e-mail alarms and notifications
Remote Monitoring	Monitoring, control, and management functions (fan speed, temperature, voltage, redundant power failure, power consumption, disk health, raid health, and memory health)

Power Supply

Power Supply	AC Redundant Power Supply - Optional Single DC Redundant Power Supply - Optional Single

Mechanical

Dimensions	483 x 88 x 510 mm from 19" brackets - 540 mm full depth (W x H x D)
Material	Aluminum with surface passivation treatment
Colour	Black / RAL 9005 - Powder Coating
Mounting	2U 19" rackmount chassis Optional Telescopic slides
Configuration	Rear I/O and Power Supply
Front Panel Leds / Buttons	Power On/Off button with LED Reset button with LED 2x USB 2.0
Drive Bays	3x 3.5" + slim DVD bay
Fans	3 x PWM fans

Environmental - (Design to meet)

Operating Temperatures	0°C to +50°C MIL-STD-810H, Method 501.7 & 502.7 -20°C to +60°C (depending on configuration)
Storage Temperature	-40°C to +70°C MIL-STD-810H, Method 501.7 & 502.7
Humidity	5% – 95% non-condensing MIL-STD-810H 507.6
Operating Vibrations	MIL-STD-167-1A, Type I
Not Operating Vibrations	1.17 Grms, 5-500 Hz MIL-STD-810H, Method 514.8
Operating Shocks	20g / 11ms – half sine MIL-STD-810G, Method 516.7
EMC	Directive 2014/35/UE-LVD | Directive 2014/30/UE-EMC | Directive 2011/65/UE - RoHS Regulation EC No 1907/2006 | MIL-STD-461G (on request)

GAP servers and workstations are designed in accordance with the environmental specifications indicated. Some parameters depend on the configuration. Equipment may be subjected to dedicated test profiles.