

# GAP-251R-S7 Series

## 2U RUGGED SERVER

3<sup>rd</sup> Gen Intel® Xeon® Scalable Processors  
Rear I/O - Rear Power Supply



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**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 3<sup>rd</sup> 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 length 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. Furthermore it can accommodate 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
- 3<sup>rd</sup> 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

<b>CPU</b>	3 <sup>rd</sup> Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) max 270W TDP
<b>Memory</b>	Up to 4TB ECC RDIMM, DDR4-3200MHz; 16 DIMM slots
<b>Chipset</b>	Intel® C621A
<b>Graphics</b>	ASPEED AST2600 BMC
<b>Network Connectivity</b>	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
<b>Storage</b>	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
<b>TPM</b>	1x TPM Header
<b>Motherboard I/O shield</b>	Available on the rear: 1x VGA, 2x USB 3.0, 1x IPMI LAN; 1x COM
<b>Expansion slots</b>	Up to 6x PCIe 4.0 cards or 2x double-width GPUs and 2x PCIe cards.
<b>Operative Systems</b>	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
<b>IPMI</b>	IPMI2.0, SPM, Watchdog; SNMP and e-mail alarms and notifications
<b>Remote Monitoring</b>	Monitoring, control, and management functions (fan speed, temperature, voltage, redundant power failure, power consumption, disk health, raid health, and memory health)

### Power Supply

<b>Power Supply</b>	AC Redundant Power Supply - Optional Single DC Redundant Power Supply - Optional Single
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### Mechanical

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

### Environmental - (Design to meet)

<b>Operating Temperatures</b>	0°C to +50°C MIL-STD-810H, Method 501.7 & 502.7 -20°C to +60°C (depending on configuration)
<b>Storage Temperature</b>	-40°C to +70°C MIL-STD-810H, Method 501.7 & 502.7
<b>Humidity</b>	5% – 95% non-condensing MIL-STD-810H 507.6
<b>Operating Vibrations</b>	MIL-STD-167-1A, Type I
<b>Not Operating Vibrations</b>	1.17 Grms, 5-500 Hz MIL-STD-810H, Method 514.8
<b>Operating Shocks</b>	20g / 11ms – half sine MIL-STD-810G, Method 516.7
<b>EMC</b>	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.