GroqRack™ Compute Cluster.

The backbone of low latency, large-scale deployments.

For data center deployments, GroqRack provides an extensible accelerator network. Combining the power of an eight GroqNode™ set, GroqRack features up to 64 interconnected chips. The result is a deterministic network with an end-to-end latency of only 1.6µs for a single rack, ideal for massive workloads and designed to scale out to an entire data center.

Key Features

Eight GroqNode™ servers with 64 interconnected cards plus 1 additional redundant node reduces unexpected downtime impact.

14 GB shared global SRAM delivers large globally sharable SRAM for high-bandwidth, low-latency access to model parameters.

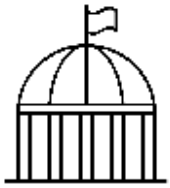
Low latency and high performance delivers large globally sharable SRAM for high-bandwidth, low-latency access to model parameters.

704 RealScale™ chip-to-chip connectors enable near-linear multi-server and multi-rack scalability without the need for external switches.

Up to 3.2 TBps global bisectional bandwidth facilitates massive concurrency and data parallelism needed for bandwidth-sensitive applications.

End-to-end on-chip protection improves uptime and reliability with error-correction code protection throughout the entire GroqChip™ data path.

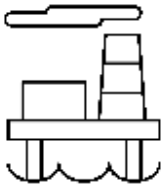
Targeted Applications



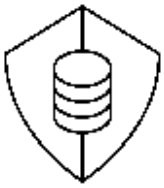
Government

Financial Services

Enterprise Comms



Oil & Gas



Cyber & InfoSec

Research & Sciences

GR1-B9A Specifications

Feature	Description
Availability	Shipping now to select customers. Broadly available 2H'22.
Chassis	GroqRack 42U Server Chassis
GroqNode Servers	Up to 9 x GroqNode 1 (GN1-B8C) servers with a fully connected internal RealScale network delivering accelerated compute performance up to 48 POPs (INT8), 12 PFLOPs (FP16)
Realscale Network	288 x QSFP28 GroqNode connectors creating a switchless routing fabric with 3.2TBps total global bisection bandwidth across a single global hop
Server Management	Primary Rack Controller Server with AMD EYPC 7413 Processor
NVMe Server	NVMe Server with dual AMD EYPC 7413 Processors with 8 x 7.68TB NVME installed for data (61.44TB total storage)
Ethernet	2 x 100GE Ethernet Switches (data network + redundancy) with min 32 x QSFP28 ports 1GE Ethernet Switch (management network) with min 48 x RJ45 ports
Power	4x 17.3kW PDUs (2N Redundancy)
OS and Software	Ubuntu Linux with GroqWare™ Suite (SDK and Utilities) pre-installed on dual SATA SSD drives (RAID1 config). Optional support for RHEL & Rocky Linux.

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