NVIDIA HGX B300 server specification

The GPU node, CPU node and control plane node as 1Legion delivers them

This sheet describes the servers in a 1Legion HGX B300 cluster. It summarizes our delivery specification, the baseline for every HGX B300 proposal. Items marked preferred can be met by an equivalent, and any change a customer needs is listed in the proposal as a numbered deviation.

GPU node

Platform	NVIDIA HGX B300, 8 GPUs on one baseboard
GPU memory	270 GB HBM3e per GPU, 2.1 TB per server (NVIDIA HGX B300 figures)
Cooling	Air cooled, on the OEM recommendation at cluster scale
CPU	At least 128 vCPUs
System memory	3 TB preferred; at least 240 GB per GPU (1.92 TB)
Boot storage	2 x 1 TB NVMe, mirrored (preferred)
Local data storage	At least 9.2 TB raw NVMe, more than 4 x GPU memory
Backend network	800 Gb/s per GPU (1 x 800, 2 x 400 or 4 x 200 Gb/s); NVIDIA ConnectX-8 preferred
Frontend network	NVIDIA BlueField-3; 2 x 400 Gb/s preferred, 2 x 200 Gb/s minimum
Planning power	About 14 kW per GPU node (working assumption)

GPU figures published by NVIDIA

Architecture	NVIDIA Blackwell Ultra
Memory bandwidth	7.7 TB/s per GPU
FP4 Tensor, 8 GPUs	144 PFLOPS sparse, 108 PFLOPS dense
FP8 and FP6 Tensor, 8 GPUs	72 PFLOPS sparse
NVLink	Fifth generation, 1.8 TB/s per GPU, 14.4 TB/s per server
Power per GPU	Configurable, up to 1,100 W

Source: NVIDIA HGX platform page and NVIDIA Blackwell Ultra datasheet.

CPU node

Role	Runs the services around the GPUs: serving, routing and batch
Sizing	At least 6 hardware threads and 24 GB of memory per GPU in the cluster
CPU	x86, at least 128 vCPUs, base clock above 3 GHz; AMD EPYC 9565 or 9575F preferred
Memory	4 GB per thread
Frontend network	NVIDIA BlueField-3
Planning power	About 1.0 kW per node

Control plane node

CPU	32 vCPUs above 3.65 GHz; AMD EPYC 9175F preferred
Memory	128 GB
Count	6 nodes per 2,304 GPUs, spread over two racks
Planning power	About 0.5 kW per node

How these servers are rented

- Whole servers only, on 36, 48 or 60 month terms. Longer terms carry lower rates.
- One fixed rate for the term, with no egress fees. Every price is given in a written proposal.
- Every cluster passes NVIDIA hardware validation tests HW-1 to HW-5 before handover, with the results in an acceptance report.

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