Bull

BullSequana XH3500

Accelerate HPC simulations and AI factories with a converged supercomputer platform and its E2E solutions

One platform. Any workload. Unprecedented performance.

The rise of AI applications and increasingly complex simulations is pushing HPC to its limits. Customers now demand exascale-class performance, extreme density, technology flexibility, and energy efficiency.

BullSequana XH3500 meets these challenges with a modular, all-in-one hybrid supercomputer platform, combining large-scale AI and exascale simulation. It delivers **unmatched scalability, efficiency, flexibility, and resilience**, powered by Bull's decades of R&D and supercomputing expertise.

Unmatched scalability and future-readiness

- **Granular scalability** from blade to rack with an **all-in-one** modular architecture for fine-grain expansion.
- **Future-ready design** with substantially increased power and cooling.

Best-in-class energy efficiency

- **5th-generation 100% fanless Direct Liquid Cooling (DLC)** operating at 40°C (104°F) facility water to reach maximum efficiency and deliver lowest TCO.
- **Intelligent energy optimisation software suites** with BullSequana ARGOS and Smart Performance Management Suite for real-time power capping, carbon tracking, workload scheduling, and GPU-aware tuning, maximising performance per watt.
- **Dynamic resource optimisation** through software that monitors job efficiency, allocates resources, and fine-tunes performance, maximising utilisation and reducing scale-out needs.

Industry-leading density and flexibility

- **High-density** architecture providing industry-leading compute density.
- **Full flexibility** with interchangeable CPU/GPU compute blades and interconnect switch blades, supporting any leading technology to avoid technology vendor lock-in.

Trusted, sovereign and secured by design

- **N+1 redundancy** for power and cooling, covering pumps and controllers, ensures high availability and continuity even under stress or failure conditions.
- Security is embedded at the hardware level, with features such as a **hardware root of trust, secure boot, and secure firmware update**, protecting the system against unauthorised modification and attacks.
- All BullSequana software includes a **Software Bill of Materials (SBOM)** to identify and remediate vulnerabilities throughout the cluster lifecycle, ensuring maximum security from development to production.
- Trusted **global support** tailored to operational needs, with options for 'Made in' regional delivery, ensuring sovereignty, reliability, and compliance worldwide.

Unmatched Scalability & Future Readiness

Best-in-Class Energy Efficiency

Industry-leading Density & Flexibility

Trusted, Sovereign, and Secure by Design

Technical Specifications

BullSequana XH3500 Rack Specifications

Physical dimensions with doors on castors/ loadspreader	• Without Ultra Capacitor Module (UCM), H x W x D mm(in): 2270 (89.4) x 900 (35.4) x 1457 (57.4) • With UCM, H x W x D mm(in): 2436 (95.9) x 900 (35.4) x 1457 (57.4)
Cabinet maximum weight at maximum rack configuration	• Without UCM, in kg (lbs): 3211 (7079) • With UCM in Kg (lbs): 3449 (7604)
Cabinet maximum weight density on load spreader at maximum rack configuration	• Without UCM, in Kg/m² (lbs/ft²): 5721 (557.3) • With UCM, in Kg/m² (lbs/ft²): 2923 (598.7)

Power requirements	• AC compute: up to 284 kW (compute + 1 pump)
	
	• DC compute: up to 264 Kw with N+1 PSU redundancy
	
	• Optional UCM to provide power failure up to 300 ms
	
	• Supported voltages 400V (EU) 415V-480V (US) and 380V (Brasil-Korea)
	
	• Rack power connections standard top feed, with accessories from bottom:
	  • 4X 125A 230/400V (EU) 3P+N+E
	  • 2X 16A 230/400V (EU) 3P+E (one active pump, one backup)

Cooling	• 100% fanless Direct Liquid Cooling (DLC), in-rack Coolant Distribution Unit (CDU).
	
	• Inlet water temperature: 6 – 40 °C (42.8 – 104 °F) rack inlet water temperature (depending on site environmental configuration and blade technology).
	
	• Compliance: ASHRAE A2/W40.
	
	• Redundancy: Redundant parts include pumps, controllers, and primary regulation valves.
	
	• Rack hydraulic connections: Standard bottom feed, with accessories available from top feed.
	
	• Connections:
	  • 2X DN38 (rack side)
	  • 2X DN40 with insulated hoses (customer side)

Blade slots	• 38 Universal 1RU slots
	  • Can house compute blades in different sizes: 1RU or 2RU
	  • Supports interconnect switch blades
	  • Accommodates up to eight 1RU UCM blades

Technical Specifications

BullSequana XH3515B Accelerated Compute Blade Specifications

Form factor, Weight	• 1RU, 35Kg
Blade layout	• Single node GB200-NVL4 • (4 × NVIDIA Blackwell B200 accelerators, 2 × NVIDIA Grace CPUs)
GPU	• NVIDIA Blackwell B200 • 186GB HBM3e per GPU
CPU	• NVIDIA Grace • 512 GB LPDDR5x per CPU
Compute networking	• 4 × Bull BXI V3 400 Gbps or 4 × InfiniBand XDR/NDR
I/O networking	• Up to 1x InfiniBand NDR or 1x Ethernet
Node storage	• Up to 9x E1.S NVMe SSD

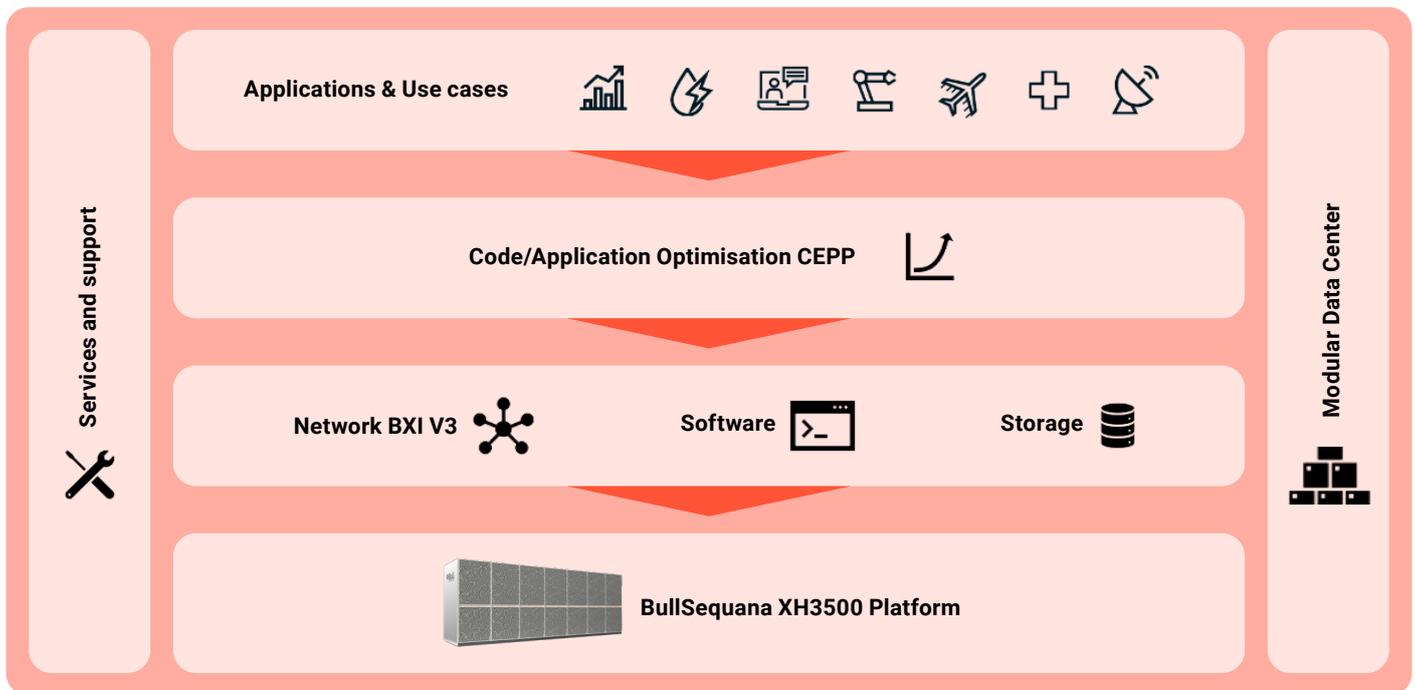**BullSequana AI1242 Accelerated Compute Blade Specifications**

Form factor, Weight	• 2RU, 75kg
Blade layout	• Single node • (8 x AMD Instinct™ MI355X GPU, 2 x AMD EPYC™ CPU)
GPU	• AMD Instinct™ MI355X • 288GB HMB3e per GPU
CPU	• AMD 5th Gen EPYC™ • 12 x memory channels of DDR5 6400MT/s per CPU
Compute networking	• Up to 8 x 400 Gb/s per node via 4 x Bull BXI V3 or 8 Infiniband NDR/XDR
I/O networking	• Up to 2x BXI V3 or 2x InfiniBand NDR or 2x Ethernet
Node storage	• Up to 4x E1.S NVMe SSD

Maximising Bullsequana XH3500 with integrated solutions and expertise

Integrated Solutions and Expertise

Beyond BullSequana XH3500, Bull delivers a complete solution with optimised software stacks for unified orchestration, flexible interconnects, and modular data centers to accelerate time-to-market.

With the rise of AI factories, Bull's proven use cases help customers rapidly deploy sector-specific solutions for real-world impact. Our Center for Excellence In Performance Programming (CEPP) ensures application-level optimisation for maximum performance, empowering businesses to innovate faster and stay ahead.

Services and support	**Applications & Use cases**
	Code/Application Optimisation CEPP
	Network BXI V3 **Software** **Storage**
	BullSequana XH3500 Platform
	Modular Data Center