

BullSequana X series

BullSequana X550 air-cooled blade system

The BullSequana X550 series is a modular air-cooled blade system, designed specifically for Extreme Computing. Our aim? To offer you made-to-measure solutions based on industry standards so you can go even further, to demand more from your systems, to innovate even faster, and to turn the corner into the future at the head of the pack. Delivering anything from a few teraflops to several petaflops, depending on your needs, the BullSequana X550 blade system helps you push back the frontiers of innovation.

The BullSequana X550 blade system was designed with the following guidelines in mind:

- Optimization and simplification of the compute node for HPC usage;
- Integration of several compute nodes and first-level InfiniBand EDR or OPA interconnect;
- Flexible structure for communication and I/O networks, for the closest fit with customer requirements;
- Large memory footprint: for structured data management, structured and unstructured data analytics.



Protecting your investment

The BullSequana X550 series initially proposes one blade model with two sockets per node. In the near future, the series will be extended with new blade models: four sockets per node, GPUs, storage. They will be fully compatible with the existing enclosure, to maximize the longevity of your system.

Leading edge technologies

The BullSequana X550 series leverages the latest technological advances such as:

- Intel® Xeon® processors Scalable family and matching Intel chipset;
- InfiniBand EDR or OPA interconnect switch integrated in chassis;
- Different options available for Ethernet network connection with 1GbE or 10GbE switches;
- Storage: 2.5" SSDs or HDDs and NVMe drives available.

Thanks to these innovations, the Bull X550 blade system delivers:

- improved performance (enhanced compute node efficiency, reduced latency, higher communication and I/O through put);
- reduced cost of ownership compared to rack-mount servers with equivalent features;
- enhanced reliability (less cabling).

A high-density blade chassis

The blade chassis can host, within 8U, 20 dual-socket compute blades. It also contains the first-level interconnect, Ethernet network switches, a management unit, and all components necessary to power and cool the blades, interconnect and management unit. It is the ideal foundation to build a small to large HPC cluster, associated to service nodes of the new BullSequana X430 E5 family.

Uncompromised performance

We estimate that a 20-blade enclosure with a peak performance of 30 Tflops offers the best consumption/performance/price ratio, though a peak performance of 60 Tflops is possible with high-end CPUs. The BullSequana X550 series offers optimal performance thanks to:

- 2 Intel® Xeon® processors Scalable family;
- Up to 16 DIMM slots (8 DIMMs per socket) supporting latest generation ECC DDR4 DIMMs - ready for future memory technology;
- InfiniBand EDR or OPA interconnect.

Optimized power consumption

- The blade enclosure supports up to 8 power supplies, each one with its own fans for optimal cooling efficiency. 3 optional 2-fan modules can be added for blades with a high TDP;
- High-efficiency Titanium (+96%) power supply unit;
- Smart fan control in each chassis.



Atos

Technical specifications

BullSequana X550 blade enclosure

Form Factor	Chassis Blade	Rack mount 8U drawer 100 x 2P servers per 42U rack 20 half height dual CPU blades per drawer, other blade models in the near future
Management	Chassis Management Module (CMM)	1 Chassis Management Module (CMM) including: Centralized remote management for <ul style="list-style-type: none"> • Blade servers • Power supplies • Cooling fans • Switches (Ethernet and interconnect) Power management with power capping IPMI 2.0, Serial-over-LAN, Virtual-media-over-LAN, SNMP, IpmiLog
Cooling		Up to 8 fans (1 per PWS) 3 optional additional modules with 2 fans
Power Supply		4, 6 or 8 2200W Titanium (96% efficiency) PSU/cooling fans
Interconnect	1 EDR switch per enclosure or 1 OPA switch per enclosure	20 downlinks and 16 InfiniBand uplinks (100 Gb) 20 downlinks and 24 uplinks (100 Gb)
Network	2 optional Ethernet switches per enclosure	1Gb Ethernet Switch Module for backbone access (optional) 10Gb Ethernet Switch Module (optional)
Physical Specifications	Drawer size (H x W x D)	30,61 cm (12.1") x 46,80 cm (18.5") x 73,37cm (29")

BullSequana X550 blade enclosure

Form Factor		Simple-width half height blade containing two CPUs
Processors		Two 2nd Generation Intel® Xeon® Scalable processors
Architecture	Chipset	Up to 8 fans (1 per PWS) 3 optional additional modules with 2 fans
Memory	Memory slots (number, type) Memory Max	Up to 16 DIMM slots (8 DIMMs per socket) supporting 12 latest generation ECC DDR4 DIMMs - ready for future memory technology Support of the highest available memory transfer rate 768GB Reg ECC DDR4 (with 64 GB LRDIMMs)
Infiniband And Opa		1x 100G EDR IB or OPA mezzanine plugged on motherboard
Management		One Aspeed 2500 BMC, IPMI 2.0, KVM-over-IP, Virtual Media over LAN
Ethernet		2 Ethernet internal 10GbE to connect Ethernet switches 1 Ethernet internal 1GbE to connect CMM
Storage Devices	Disk drives	3 hot-plug 2.5" SATA3 or 2 NVMe 1 internal M.2 NVMe 1 internal satadom
Regulatory Compliance		Safety (EC, IEC, UL, CSA certifications) ; Electromagnetic Compatibility (EC, FCC, ICES-03, VCCI certifications), Environment (RoHS II & WEEE directives, REACH regulation)
Os And Cluster Software		Linux Support & Bull Super Computer Suite SCS5
Warranty & Services		Standard server warranty 1 year, extended: consult us

For more information: hpc@atos.net

atos.net/products/high-performance-computing-hpc

Atos, the Atos logo, Atos Syntel, and Unify are registered trademarks of the Atos group. July 2019. © 2019 Atos. Confidential information owned by Atos, to be used by the recipient only. This document, or any part of it, may not be reproduced, copied, circulated and/or distributed nor quoted without prior written approval from Atos

Intel, the Intel logo, Xeon, and Xeon Inside are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.