



# BullSequana X400 series

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# AtoS





# BullSequana X400 series

The BullSequana X400 series is a comprehensive family of rack-mounted servers designed for High Performance Computing and offering an optimum balance between cost and performance.

## Truly designed for any HPC workload

The BullSequana X400 server's **family allows you to address any workloads and to scale as you grow:**

- [BullSequana X440](#): Compute node
- [BullSequana X430](#): Service / Login node
- [BullSequana X410](#): GPU Accelerated node
- [BullSequana X450](#): Graphic node

Atos close collaboration with key technology providers enables BullSequana X400 server family to be time-to-market and to feature best-in-class latest technologies:

- Latest market-leading high-performance computing technologies (Intel®, NVIDIA® and AMD®);
- Largest DIMM and NVDIMM capacity at high frequency rates
- High-end interconnect networking technologies (Mellanox InfiniBand, High Speed Ethernet)
- Wide storage technologies (NVME, SATA, SAS)
- Advanced remote management features.

All our servers come with the HPC Software Suites, a software environment that meets the requirements of the most challenging HPC configurations and workloads, with high security standards.

## Benefit from Atos' long-standing expertise in HPC solutions

With BullSequana X400 series, Atos provides an outstanding service level:

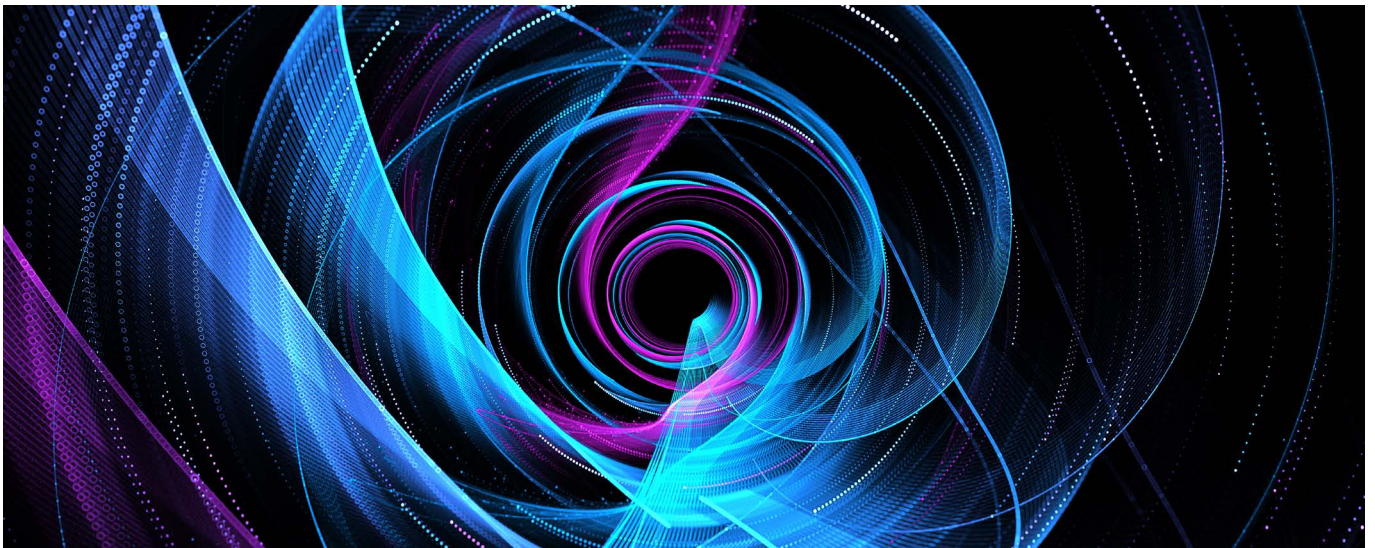
- With the Fast Start program, Atos experts guide you from day one to make sure that the solution is tailored to your needs and that you can start running workloads efficiently as quickly as possible.
- Your supercomputer will be installed and tested on your premises by highly skilled engineers who will answer any of your questions.
- Guided by Atos HPC experts, your team will be able to run workloads on the system very quickly and efficiently
- High quality maintenance and support will be provided during the whole lifecycle of your supercomputer.
- Atos Center for Excellence in Parallel Programming collaborates with you to get optimal application performance on BullSequana X400 series.

By choosing BullSequana X400 family, you choose to be guided and trained by some of the most qualified HPC experts.

## Optimized TCO

The BullSequana X400 family is **designed to be cost-effective** without leaving performances out. Every server has an optimized density and performance to cost ratio. BullSequana X400 are air-cooled servers that fit in standard racks which enables time, space and cost saving for deployment. Several customers have already entrusted this solution at government, education or industrial facilities.

BullSequana X400 family is highly energy efficient featuring 80+ Titanium certified Power Supplies, PWM cooling fans and advanced power-monitoring and management via the HPC Software Suites.







# BullSequana X440

## Compute node

BullSequana X440 Compute nodes are perfectly sized to deliver the level of performance required by power-hungry and complex HPC workloads. Their outstanding density makes it possible to minimize the footprint, significantly reduce real estate or rental costs and improved energy efficiency. Storage on multiple hard disks allows data redundancy and performance improvement. RAID technology provides the right balance between reliability, availability, performance, capacity - and cost!





## Technical specifications

	BullSequana X440 - E5		BullSequana X440 - A5	
				
Form Factor	2U4N2S		2U4N2S	2U4N1S
Dimensions HxWxD, mm	88 x 438 x 774 mm 3.47" x 17.25" x 30.5"	88 x 438 x 724 mm 3.47" x 17.25" x 28.5"	87.5 x 440 x 820 mm 3.44" x 17.32" x 32.28"	87.5 x 440 x 650 mm 3.44" x 17.32" x 25.59"
Processors	Dual Socket per node 2nd Gen. Intel® Xeon® Scalable Cascade Lake, TDP up to 165W		Dual socket P per node AMD EPYC™ ROME 7002 series TDP up to 225W	Single socket per node AMD EPYC™ ROME 7002 series TDP up to 225W
Memory	12x DIMM slots per node DDR4 2933MHz RDIMM/LRDIMM Supports Intel® Optane™ DCPMM		16x DIMM slots per node DDR4 3200MHz RDIMM/ LRDIMM	8x DIMM slots per node DDR4 3200MHz RDIMM/ LRDIMM
Expansion slots (per node)	2x PCIe Gen3 PCIe 3.0 x16 (low profile) 1x PCIe Gen3 PCIe 3.0 x16 for SIOM only		2x PCIe Gen4 x16 1x OCP 2.0 PCIe Gen3 x16	1x PCIe Gen4 x16 1x PCIe Gen3 x16 1x OCP 2.0 PCIe Gen3 x16
Network per node	SIOM with various options: 2x or 4x ports for 1GbE, 10GbE SFP+ or RJ45		2x 1GbE ports 1x management port	
Storage	12x hot-swap 3.5" SATA/SAS disk trays	24x hot-swap 2.5" SATA/SAS disk trays	24x hot-swap 2.5" SATA/SAS/ NVMe disk trays	
Power Supply	Redundant 2200W 80+ Titanium with PMBus		Redundant 2200W 80+ Platinum	Redundant 2000W 80+ Platinum
OS & Cluster Software	Red Hat Enterprise Linux & the HPC Software Suites			
Regulatory Compliance	Safety (CE marking, UL/CSA listed) ; Electromagnetic Compatibility (FCC Class A, CE), Environment (RoHS II & WEEE directives, REACH regulation)		Safety (CE certification) ; Electromagnetic Compatibility (FCC, CE, ICES-03 certification), Environment (RoHS II & WEEE directives)	
Warranty & Services	1 year standard warranty, optional extension			

## Service node

BullSequana X430 servers are ideally suited as a service nodes, their advanced connectivity features, extended storage options and improved redundancy, guarantee efficient and reliable cluster administration services. Designed with Extreme Computing in mind, they combine the features expected from efficient service nodes and can be connect with other Atos HPC systems to make up a powerful and cost-efficient cluster.

## Technical specifications





	BullSequana X430 - E5		BullSequana X430 - A5	
				
Form Factor	2U1N2S	1U1N1S	2U1N2S	2U1N1S
Dimensions HxWxD, mm	89 x 437 x 647 mm 3.5" x 17.22" x 25.5"	43 x 437 x 650 mm 1.7" x 17.2" x 25.6"	87 x 438 x 730 mm 3.43" x 17.24" x 28.74"	87.5 x 438 x 660 mm 3.44" x 17.24" x 25.98"
Processors	Dual Socket 2nd Gen. Intel® Xeon® Scalable Cascade Lake, TDP up to 205W	Single Socket 2nd Gen. Intel® Xeon® Scalable Cascade Lake, TDP up to 205W	Dual socket AMD EPYC™ ROME 7002 series TDP up to 280W	Single socket AMD EPYC™ ROME 7002 series, TDP up to 280W
Memory	12x DIMM slots DDR4 2933MHz RDIMM/RDIMM Supports Intel® Optane™ DCPMM	6x DIMM slots DDR4 2933MHz RDIMM/LRDIMM Supports Intel® Optane™ DCPMM	32x DIMM slots DDR4 3200MHz RDIMM/LRDIMM	16x DIMM slots DDR4 3200MHz RDIMM/LRDIMM
Expansion slots (per node)	4x PCIe Gen3 x16 2x PCIe Gen3 x8	2x PCIe Gen3 x16 1x PCIe Gen3 x8	2x PCIe Gen4 x16 6x PCIe Gen4 x8 1x OCP 3.0 PCIe Gen4 x16 1x OCP 2.0 PCIe Gen3 x8	3x PCIe Gen4 x16 1x PCIe Gen4 x8 1x PCIe Gen3 x16 or x8 1x OCP 2.0 PCIe Gen3 x16
Network	2x 10 GbE write ports 1x Management port		2x 1GbE ports 1x Management port	
Storage	8x hot-swap 3.5" SATA disk trays	4x hot-swap 3.5" SATA3 disk trays	Front: 24x hot-swap 2.5" SATA/SAS/NVMe disk trays Rear: 2x hot-swap 2.5" SATA/SAS disk trays 1x M.2 NGFF- 2242/2260/2280/22110	Front: 24x hot-swap 2.5" SATA/SAS/NVMe disk trays Rear: 2x hot-swap 2.5" SATA/SAS disk trays 2x M.2 NGFF- 2242/2260/2280
Power Supply	Redundant 1000W with PMBus 80+ Platinum with PMBus		Redundant 800W 80+ Platinum	
OS & Cluster Software	Red Hat Enterprise Linux & the HPC Software Suites			
Regulatory Compliance	Safety (CE marking, UL/CSA listed) ; Electromagnetic Compatibility (FCC Class A, CE), Environment (RoHS II & WEEE directives, REACH regulation)		Safety (CE certification) ; Electromagnetic Compatibility (FCC, CE, ICES-03 certification), Environment (RoHS II & WEEE directives)	
Warranty & Services	1 year standard warranty, optional extension			

# BullSequana X410

## GPU Accelerated compute node

With BullSequana X410, Atos offers complete GPU-based solutions: hardware leveraging the latest technologies, an integrated software environment, expertise and services to implement your solution. NVIDIA® Tesla® GPUs are highly parallel processors designed to boost computing. The integration of up to eight GPUs within 2U places this system at the forefront of today's accelerated computing solutions, both in terms of compute density, performance and cost-optimization. Pioneered in 2008 by Bull in its supercomputing range, GPU accelerators now power energy-efficient data centers in government labs, universities, enterprises, and small-and-medium businesses around the world.

## Technical specifications

	BullSequana X410 - E5		BullSequana X410 - A5	
				
Form Factor	1U1N2S4GPU 4 PCIe GPUs	1U1N2S4GPU 4 SXM2 GPUs (with NVLink)	2U1N1S4GPU	2U1N2S8GPU
Dimensions HxWxD, mm	43 x 437 x 894 mm 1.7" x 17.2" x 35.2"		87.5 x 438 x 820 mm 3.43" x 17.24" x 32.28"	87.5 x 448 x 800 mm 3.4" x 17.6" x 31.5"
Compatible GPUs	Up to 4x PCIe GPUs NVIDIA® Tesla® V100s	Up to 4x SXM2 GPUs NVIDIA® Tesla® V100 NVLink: Up to 300GB/s GPU-to-GPU	Up to 4x PCIe GPUs NVIDIA® T4, V100s, Quadro RTX, AMD Radeon MI50	Up to 8x PCIe GPUs NVIDIA® T4, V100s, Quadro RTX, AMD Radeon MI50
Processors	Dual socket 2nd Gen. Intel® Xeon® Scalable Cascade Lake TDP up to 165W		Single socket AMD EPYC™ ROME 7002 series TDP up to 225W	Dual socket AMD EPYC™ ROME 7002 series TDP up to 225W
Memory	12x DIMM slots DDR4 2933MHz RDIMM/LRDIMM Supports Intel® Optane™ DCPMM		8x DIMM slots DDR4 3200MHz RDIMM/LRDIMM	16x DIMM slots DDR4 3200MHz RDIMM/LRDIMM
Expansion slots (per node)	4x PCIe Gen3 x16 2x PCIe Gen3 x16	4x PCIe Gen3 x16	4x PCIe Gen3 x16 for GPU 2x PCIe Gen3 x16/x8 1x OCP 2.0 PCIe Gen3 x16	4x PCIe Gen4 x16 for GPU 2x PCIe Gen4 x16
Network	2x 10GbE ports 1x Management port		2x 1GbE port 1x Management port	2x 10GbE ports 1x Management port
Storage	2x hot-swap 2.5" SAS/SATA disk trays 2x fixed internal 2.5" disk trays  1x M.2 2242/2260/2280		Front 4x 3.5" Hot-swap disk Rear 2x 2.5" Hot-swap disk	
Power Supply	Redundant 2000W with PMBus		Redundant 1600W 80+ Platinum	Redundant 2200W 80+ Platinum
OS & Cluster Software	Red Hat Enterprise Linux & the HPC Software Suites			
Regulatory Compliance	Safety (CE marking, UL/CSA listed)- Electromagnetic Compatibility (FCC Class A, CE), Environment (RoHS II & WEEE directives, REACH regulation)		Safety (CE certification)- Electromagnetic Compatibility (FCC, CE, ICES-03 certification), Environment (RoHS II & WEEE directives)	
Warranty & Services	1 year standard warranty, optional extension			



# BullSequana X450

## Graphics node

BullSequana X450 is a highly flexible graphic node which combine the qualities expected from efficient visualization nodes in the most depending HPC, data visualization and rendering workloads.

The server is optimized to support several coprocessors-GPUs and the latest graphic cards. It is compatible with a large selection of active or passive NVIDIA® GPU cards and NVIDIA® graphic cards.

## Technical specifications

	BullSequana X450 - E5	BullSequana X450 - A5
		
<b>Form Factor</b>	4U1N2S4GPU	2U1N2S3GPU
<b>Dimensions HxWxD, mm</b>	462 x 178 x 673 mm 18.2" x 7.0" x 26.5"	438 x 87 x 730 mm 17.2" x 3.4" x 28.7"
<b>Compatible Accelerators &amp; Graphics Cards</b>	Up to 4x GPUS or accelerators NVIDIA® Tesla® V100, Intel® Xeon Phi™ 3120P or 7120P or 3120A, 7120A coprocessors NVIDIA® Quadro, NVS	Up to 3x GPUs or accelerators NVIDIA® Tesla® V100s, T4, Quadro RTX6000/8000 AMD Radeon MI50
<b>Processors</b>	Dual Socket 2nd Gen. Intel® Xeon® Scalable Cascade Lake	Dual socket AMD EPYC™ ROME 7002 series
<b>Memory</b>	12x DIMM slots DDR4 2933MHz RDIMM/LRDIMM Supports Intel® Optane™ DCPMM	32x DIMM slots DDR4 3200MHz RDIMM/LRDIMM
<b>Expansion slots (per node)</b>	4x PCIe Gen3 x16 2x PCIe Gen3 x16 1x PCIe Gen3 x4	3x PCIe Gen4 x16 (for GPU) 2x PCIe Gen4 x16 1x OCP 3.0 PCIe Gen4 x16 1x OCP 2.0 PCIe Gen3 x8
<b>Network</b>	2x 10GbE ports 1x Management port	2x 1GbE ports 1x Management port
<b>Storage</b>	8x hot-swap 3.5" disk trays Optional 4x 2.5" NVMe 1x M.2 NGFF-2280/22110	12x hot-swap 3.5"/2.5" SATA/SAS disk trays 1x M.2 NGFF-2242/2260/2280/22110
<b>Power Supply</b>	Redundant 2200W 80+ Titanium with PMBus	Redundant 2000W 80+ Platinum
<b>OS &amp; Cluster Software</b>	Red Hat Enterprise Linux & the HPC Software Suites	
<b>Regulatory Compliance</b>	Safety (CE marking, UL/CSA listed); Electromagnetic Compatibility (FCC Class A, CE), Environment (RoHS II & WEEE directives, REACH regulation)	
<b>Warranty &amp; Services</b>	1 year standard warranty, optional extension	



# About Atos

Atos is a global leader in digital transformation with over 110,000 employees in 73 countries and annual revenue of over € 11 billion.

European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions. The group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Syntel, and Unify. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information technology space. Its expertise and services support the development of knowledge, education as well as multicultural and pluralistic approaches to research that contribute to scientific and technological excellence. Across the world, the group enables its customers, employees and collaborators, and members of societies at large to live, work and develop sustainably and confidently in the information technology space.

Find out more about us

**atos.net**

**atos.net/careers**

Let's start a discussion together



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