

# Aurora G-Station

## The ultimate departmental HPC system

- High performance
- Compact and silent
- No need for controlled environment
- NVIDIA® Tesla™ GPU accelerators
- Intel® Xeon™ Phi accelerators
- Water cooled
- Best energy efficiency



## FEATURES

**Powerful** – Aurora G-Station is able to perform at 26 TFlop/s per rack. Very fast Infiniband interconnects.

**Compact** – Remarkable density, storing 16 powerful Xeon processors (up to 192 cores) and 16 NVIDIA Tesla GPUs or 16 Intel Xeon Phi in a 65 cm (25”) high rack.

**Energy efficient** – Aurora G-Station marks a record in energy efficiency with over 3.4 GFlop/s per Watt.

**Silent** – The Aurora G-Station is water cooled, so it produces very little noise.

**Reliable** – No moving parts eliminate vibrations. Direct water cooling avoids hot spots while the soldered memory provides speed and robustness.

**Scalable and easy** – The G-Station doesn't have complicated and messy cabling because all of the nodes are connected via backplane. It easily scales joining more modules together.

**Water cooled** – The Aurora G-Station is water cooled, but it doesn't need an expensive infrastructure to be deployed. All heat can be taken outside the room just as with a split air conditioner.

The Aurora G-Station is the ultimate divisional HPC system that solves your problems of dealing with the heaviest computational workloads in:

- scientific computing
- industrial applications (EDA, CAE, signal processing...)
- computer graphics and rendering
- business applications (computational finance, cyber security, forensic...)
- software development.

The Aurora G-Station is a supercomputer in a box. Small and compact, easily deployable with limited infrastructure. Available in different configurations, pre-loaded with the software stack, the G-Station is silent thanks to its liquid cooling, has no messy cabling and can be deployed in an office with no need of a controlled environment. Aurora G-Station is ideal for whoever needs easy high performance everywhere.

The virtualization and remote visualization capabilities allow for virtual machines and excellent graphic rendering, making it possible to replace workstations. The possibility to install NVIDIA GRID cards gives a boost to process heavy graphic workloads.

Eurotech manufactures the Aurora G-Station HPC systems and deploys, supports and maintains them via a VAR network. With Eurotech, you do more of your core business, with less HPC worries.

# Aurora G-Station

## Specifications

### Chassis and blades



the Aurora HPC-20-50 chassis filled with boards



the Aurora HPC 20-23 blade

### System Description

Architecture	G-Station standard configuration : 1 Aurora HPC-20-50 chassis Up to 8 Aurora BOARD-20-30 blades 1 Aurora Root Card (switching and control unit) 1 management node: Eurotech Antares ICE server (Intel Core i7 2.53 GHz, 8 GB memory, 2 HD 3.5" SATA) Industrial 28 ports Gigabit Ethernet switch
Computing power	Up to 26 Tflop/s per cabinet
Processors per blade	2 x Intel Xeon E5 26xx v2
Accelerators per blade	2 x NVIDIA Tesla K20, K20x or K40 or 2 x Intel Xeon Phi 5120D
Memory per blade	Up to 64 GB RAM per node. ECC DDR3 SDRAM 1866 MT/s
Interconnects	40 Gbps QDR Infiniband Optional: 1+1 3D Torus or 3D mesh BW: up to 240+240Gbps, Latency: ~1us
Interfaces	16 x 40 Gbps QDR Infiniband 3 x 1Gbps Ethernet 4 x USB 1 x standard VGA
Local storage per blade	SATA: 250GB, 500GB, 1 TB SSD: 128GB, 300GB, 512GB
Additional management node	A choice of low noise servers
Infiniband storage (optional)	Infiniband fast storage available
Graphic boosters (optional)	NVIDIA K1/K2 and NVIDIA Quadro Graphic Cards

### Environmental

Cooling	Aurora Direct Hot Liquid Cooling Various installation options: with external cooler and direct to air con. Cooling configuration includes: internal: cooling, plates, distribution safety - external: heat exchanger, pump, filter, valves
Power	8 kW per fully loaded (8 blades) rack (peak) Up to 4 nodes: 1 x 230 V 32 A single phase plug 5-8 nodes: 3 x 230 V 32A triphase plug
Dimensions (including wheels)	Rack: H 65 cm x W 60cm x D 78 cm (H 25.3" x W 23.4" x D 25.3") - Cooling unit: H 82 cm x W102 cm x D 42 cm (H 32.2" x W 40" x D 16.5")
Weight (fully loaded)	80 Kg (176 pounds)

### Software

Operating System	Linux CentOS, Linux Red Hat, Windows HPC 2008
Cluster Manager	Bright Cluster Manager, xCAT
Remote visualization	NICE DCV, NVIDIA GRID
Compilers, Libraries and Tools	OpenMPI, CUDA, Allinea, Intel Cluster Studio
Job Management	Altair PBS Professional, TORQUE/MAUI
Monitoring	Aurora monitoring and safety management software