



**EUROTECH**  
Imagine. Build. Succeed.

**AURORA**



# AURORA

## HPC as never seen before

**Enjoy Petascale.** As the centrepiece of the Eurotech HPC solutions, the Aurora supercomputers are designed to provide tremendous computing power in the most energy efficient way. With the Aurora HPC systems, you can confidently achieve consistent performance regardless of the dimension of your installation, scaling to petaflops levels with minimal footprint thanks to an unparalleled density. Aurora supercomputers fulfil the most demanding scientific needs at an affordable price and with an amazing TCO.

Aurora supercomputers allows for consistent energy savings thanks to the hot liquid cooling and the intelligent power conversion, applied to all the products of the Aurora line. Eurotech, a pioneer of liquid cooling, provides design and guidance to realize and operate safe and energy efficient water cooled systems.

Aurora supercomputers are solid rock reliable machines. Built in a company whose experience is to build bomb resistant computers and whose commitment to quality is notorious, they have no moving parts, no hot spots, boasting 3 independent sensor networks and a serviceability with no comparison: Eurotech has been the first in the market to offer easy to maintain and access liquid cooled blade systems.

Where the CPU performance is not enough, additional computing power can be achieved with integrated high performance accelerators.

Available in different sizes and configurations, the Aurora systems suit a variety of needs in many fields of science, business and technology.

[www.eurotech.com/aurora](http://www.eurotech.com/aurora)

## Aurora highlights

### High performance density

Liquid cooling allows reaching very high densities

- Aurora systems can pack up 1 Petaflops in 15 m<sup>2</sup> (160 ft<sup>2</sup>)

### Energy efficiency

Aurora systems are optimized in any of their parts for energy efficiency

- Heat transfer efficiency: direct, on-component liquid cooling with much better heat transfer than air
- No air conditioning needed, very efficient power conversion, optimized board consumption
- Greener Computing: many options – free cooling, thermal energy recovery, compatibility with natural sources of cold water

### Smart economics

A total cost ownership lower than many competitive solutions

- Up to 50% energy savings, low space occupancy, reliability, highly modular systems

### Scalability

Scales linearly with the fastest interconnects available

- 3D Torus, fast Infiniband, synchronization networks facilitate linear scalability from giga to petaflops installations

### Compatibility

Preserve your software investment

- Full x86 compatibility: minimal or no porting needed
- Optimized MPI libraries: advanced networking features can be transparently used
- Standard environment: use established development and debugging tools
- Intel® Cluster Ready certified

### Reliability

Embedded resilience for extreme challenges

- Advanced and system independent control and monitoring infrastructure
- No moving parts: Aurora does not use fans, rotating media or other potential sources of mechanical failure and vibration
- Limited on board and data center hot spots

### Unified Network Architecture

Automatic and reprogrammable routing of packets over different topologies with CPU offload

- 3D Toroidal topology
- Infiniband switched network
- Latency: Sub  $\mu$ s memory to memory latency
- Monitoring: In-band and out of band
- Synchronization: three hardware synchronization networks

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