Personal Supercomputer

IT’s Personal

Medical Imaging  Oil & Gas Exploration  Quantum Chemistry  Financial Simulation  3D Rendering  Astrophysics

4 Teraflops of floating point performance at the side of your desk!

Building on ground-breaking Tesla solutions, the latest incarnation of the Viglen Personal Supercomputer offers a 4 GPU, E5-2600 workstation with massive memory and disk capacity.
Personal Supercomputer

Key Features

Massive Compute power
Supporting four NVIDIA Tesla C2075 GPU cards, up to 512GB of memory and support for up to 24TB of disk capacity, the PSC brings HPC to the side of your desk.

Dynamic scalability
Managed cores, threads, cache, interfaces, and power for energy-efficient performance on demand.

Dual Redundant High Efficiency PSU
Dual redundant hot-swappable PSUs to maximise server uptime.

Intel Xeon E5-2600 processor technology

- Advanced multi-core, multi-threaded processing
  - Up to 8 cores and 16 threads per socket
  - Ideal for virtualized data centres and HPC deployments

- Larger Memory and Cache configurations
  - Up to 20MB of last level cache for fast access to frequently used data
  - Up to 24 DIMMs per two-socket server to support data hungry applications *

- Faster memory speeds than the previous generation (1866MHz)

- Higher performance for peak workloads
  - Intel Turbo Boost Technology 2.0 takes advantage of power and thermal headroom to increase processor frequencies for peak workloads
  - Provides more and higher performance boosts and improved efficiency versus the previous generation

- Higher performance for HPC applications
  - Intel Advanced Vector Extensions (Intel AVX) accelerates vector and floating point computations by increasing maximum vector size from 128 to 256 bits
  - Provides up to 2x performance boost for floating point operations, which can significantly increase performance for HPC applications

- Industry-leading I/O performance
  - Intel Integrated I/O provides up to 80 PCIe lanes per two socket server, reduces latency by up to 30 percent and supports the PCIe 3.0 specification which increases bandwidth by as much as 2x *
  - Intel Data Direct I/O provides up to 2.3x higher I/O performance by transmitting data directly from storage to cache

The first integrated storage and server processor
- Supports key storage processor features, including non-transparent bridging to increase scalability; the ability to connect multiple systems, each with access to the other’s memory window; accelerated RAID, which eliminates the need for a custom ASIC to perform RAID 5 and 6 operations
- Stronger, faster encryption to protect data
  - Intel Advanced Encryption Standards - New Instructions (Intel AES-NI) enables pervasive encryption with fast application response times

- Hardened Protection for virtual/cloud environments
  - Intel Trusted Execution Technology (Intel TXT) lets IT establish trusted pools of virtualized resources for stronger security in virtual and cloud environments

- Industry-leading energy-efficiency
  - Intel Intelligent Power Technology dynamically manages CPU and memory energy states as workloads vary to minimize power without slowing performance

- More sensors, finer-grained control, faster control loops, and greater accuracy increase power savings versus the prior generation

- Comprehensive monitoring and control
  - Intel Node Manager lets IT monitor and control server power
  - Intel Data Center Manager lets IT dynamically optimize energy-consumption at every level, including individual servers, racks, rows and entire data centres

* Memory and expansion support are motherboard dependent

Specification

- **Base Board**
  - SuperMicro X9DRG-QF motherboard

- **Processor**
  - Up to to Eight, Six & Quad Core Intel® E5-2600 Series Processors Supported

- **Chipset**
  - Intel® C602 Chipset

- **Memory**
  - Up to 512GB of DDR3 ECC Reg 1600/1333/1066/800 MHz SDRAM in 16 DIMMs

- **Integrated SATA Interface**
  - Intel SATA 6.0/3.0Gbps Controller RAID 0,1,5,10 (SATA 3.0Gbps)
  - RAID 0,1,10 (SATA 6.0Gbps)

- **Network**
  - Dual LAN with Intel i350Gb Ethernet Controller
  - Virtual Machine Device Queues reduce I/O overhead
  - One Realtek RTL8201N PHY (dedicated IPMI)

- **Display adapter**
  - Integrated G200 Graphics

- **Expansion**
  - Four (x16) PCIe-E 3.0 Slots (for GPU)
  - One (x8) PCIe-E 3.0 low profile Slot
  - One (x4) PCIe-E 2.0 Slot

- **GPU Support**
  - Up to Four NVIDIA Tesla C2075 GPU Boards

- **IPMI Management**
  - IPMI 2.0 + KVM with dedicated LAN

- **External Ports**
  - Two stacked USB connectors on rear of chassis
  - Three RJ45 LAN Ports (Two network, one IPMI)

- **Power Supply**
  - Redundant 1620W high-efficiency power supply with PMBus and I2C (80PLUS Platinum Certified)

- **System Cooling**
  - Four 9cm Hot-Swap cooling fans and Two 8cm Hot-Swap Exhaust fans all with optimal fan speed control

- **PC Health Monitoring**
  - Monitors for CPU Cores, +1.8V, +3.3V, +5V, +12V, +5 Stdyb, +3.3 Stdyb, VBAT, Memory, Chipset Voltages

- **Drive Bays**
  - Eight.5‘ hot-swap SATA drive trays

- **System Dimensions (H x W x D)**
  - Tower/4U Rackmount - 18.2” x 3.1” x 26.5” (462mm) x 79” (178mm) x 673mm

- **Standard Warranty**
  - 3 Years on-site with a 5 working day response.
  - Additional options are available; please speak to your account manager

- **Environment**
  - Ambient Temperature: Operating: -10°C to +35°C
  - Non-operating -40°C to +70°C
  - Relative Humidity: Operating 8% to 90%
  - Non-operating 5% to 95%

Personal Supercomputer spec sheet 2012-03