

## Duet Departmental SuperComputer

*Affordable SuperComputing*



Imagine 1 TB of shared memory and 128 cores (1 TFLOPS) of power for your most demanding computing tasks. The Duet Department Supercomputer based on our Distributed Symmetric Multi-Processing (DSMP) technology turns this dream into a reality — today!

Duet Departmental Supercomputers are ideal for high performance computing applications with large memory needs: bioinformatics & life sciences (molecular modeling, genomic sequencing, and personalized medicine); engineering (coupled models & multi-dimensional simulations); energy (exploration, grid optimization); and complex financial analyses.

The Duet Departmental Supercomputer is a rack mountable system packed with 128 AMD Opteron™ series processor cores and up to 1 TB of RAM. Two server nodes become one interconnected supercomputer with high-speed Infiniband and our breakthrough DSMP technology.

A Duet Departmental Supercomputer is a true Symmetric Multi-Processing (SMP) supercomputer with a large shared memory and a single software image. The performance of our Duet is equivalent to expensive SMP supercomputers, but for only a fraction of their cost.

With Duet, engineers, scientists, researchers and analysts can finally afford the powerful large shared-memory SMP supercomputer that their applications demand.

### System Specifications

- Processors:** 128 Cores (Eight 16-core next-generation AMD Opteron™ 6276 Processors)
- Memory:** 64 DIMM sockets with 2 options:
- 512-GB 1600 MHz DDR3 (8-GB DIMMs)
  - 1-TB 1333 MHz DDR3 (16-GB DIMMs)
- Storage:** 12 Hot Swap drive bays with 2 options:
- 2-TB 7200 RPM SATA 6 Gbps Drives
  - 1-TB 7200 RPM SAS 6 Gbps Drives
- Node Interconnect:** 4 Single-port QSFP 40 Gbps InfiniBand PCIe Host Bus Adapters  
(No InfiniBand switch is needed)
- I/O:**
- 1 DVD-ROM
  - 1 RJ45 Gbps Ethernet
  - 2 USB 2.0 Ports
  - 1 VGA Port
  - PS/2 Keyboard and Mouse Ports
  - 1 Fast UART 16550 Serial Port
  - 1 RJ45 Dedicated LAN supports IPMI
  - Optional 10 Gbps Ethernet
- Environment:** 4 Redundant 1400-Watt High Efficiency Power Supplies (80 PLUS Gold Certified) Efficient Front-to-Back Cooling
- Power:** 1200 W: 100-140V, 50-60 Hz, 10.5-14.7 Amp  
(per node) 1400 W: 180-240V, 50-60Hz, 7.2-9.5 Amp
- Dimensions:** Standard 19 inch Rack Mountable Height — 4U (7 inches or 178 mm)  
Width — 17.2 inches (437 mm)  
Depth — 27.75 inches (705 mm)



**Gross Weight:** 138 lbs. (62.6 kg)

#### Software Specifications:

- Linux Support (OpenSUSE 11.4)
- DSMP™ Distributed Symmetric Multi-Processing™
- OpenMP, Pthreads, POSIX

Distributed Symmetric Multi-Processing™ enables Symmetric MultiProcessing on a Duet Departmental Supercomputer — a single software image with 512 GB or 1 TB single shared memory across 2 server nodes with 128 AMD Opteron™ cores.

#### Features

#### Benefits

- Affordable Supercomputing ✓ *Faster projects. No more delays waiting for scheduled HPC time.*
- Large Single Shared Memory ✓ *Ideal for large memory applications*
- Single Software Image ✓ *Simple and scalable SMP multi-threaded programming. No complicated cluster tailoring.*
- Power Efficient ✓ *Saves money and runs cooler*
- Only 6U Rack Space ✓ *Fits easily into your existing racks*

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