

# DS-96 Deskside

## 96-Node Personal Cluster Workstation



- The power of 96 computers from a single wall outlet
- Turnkey cluster systems with easy-to-use applications
- Affordable Personal Supercomputing
- Fully Scalable
- Standards-based Parallel Computing

Orion Multisystems has created a more powerful, efficient, and resourceful way to work. Orion Deskside Workstations are self-contained units utilizing cutting-edge cluster technology. They bring individual users unprecedented control over their supercomputing projects.

### Powerful

Orion has made supercomputing more manageable by creating a turnkey implementation that merges our unique system architecture and our easy-to-use Linux distribution. The deskside workstation delivers a peak performance of 230 gigaflops. They're fully scalable so you can add performance as your needs expand. It can be used on site: in the office, the laboratory, on a boat, or even aloft in a plane.

### Efficient

Each Orion Workstation is an individual supercomputer that works right out of the box, boots quickly, and plugs into a standard wall socket. Our workstations increase the efficiency of your existing workflow by allowing developers to experiment with new code before queuing up with institution-wide clusters. You get more efficient use of your IT man-hours and more effective, more focused research.

### Resourceful

Be in full control of your tools and your time for more in-depth, articulate research and faster, more comprehensive results. Each Orion Workstation is a powerful, flexible, personal supercomputing resource.

*“An important need exists in research and industry for very high performance computers for individual users.”*

—Dr. Horst Simon  
 Director, National Energy Research  
 Scientific Computing Center (NERSC)  
 Lawrence Berkeley National Laboratory



## Physical Specifications: DS-96 Deskside

### Dimensions

17"W x 27"H x 25"D

### Weight

150 pounds fully configured

### Power Requirements

Standard 110V 15A (US)

Standard 230V 8A (EU)

NEMA type plug outlet

### Power Consumption

1500W peak

## Operating Limitations

### Electrical Requirement

AC Power 100-240 VAC 47-63 Hz

### Altitude

-300 meters to +3000 meters

-1000 feet to +10,000 feet

### Temperature

<1500 meters +5° C to +35° C

1500-3000 meters +5° C to +30° C

<5000 feet +40° F to +95° F

5000-10,000 feet +40° F to +86° F

### Relative Humidity

10% to 80% noncondensing

Max. wet bulb 32° C (90° F)

### Acoustic Noise

Sound power 55 bels

Sound pressure level

<50dBA at operator position

### Electrical Emissions Classifications

RFI/EMC Canada DOC Class A

CISPR22 Class A

FCC Class A

VCCI Class A

CE

UL

## Technical Support

When it comes to great service and support, you can depend on Orion Multisystems to be there for you. From an online support system to friendly engineers ready to answer your questions via email, your issues are sure to be resolved quickly. With our online support center, you can research problems, get access to patches and manuals, and discuss your solutions with others.

<https://my.orionmulti.com>

[support@orionmulti.com](mailto:support@orionmulti.com)

1-800-344-1367

## More Information?

<http://www.orionmultisystems.com>

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## Hardware Features—DS-96 Deskside

<b>Low power standard components</b>	High performance/watt x86 processor Mobile disk drive per node for distributed storage (optional)
<b>Ethernet switch fabric</b>	Onboard Gigabit Ethernet among nodes Low voltage signaling, no PHYs, no cables
<b>Private Monitoring and Control bus</b>	Out-of-Band cluster-wide management Synchronized high resolution hardware clock Topographical addressing
<b>Integrated Video</b>	ATi Mobility™ Radeon™ 9000—64MB integrated DDR

## Software Features—DS-96 Deskside

<b>Standard Linux operating system</b>	Based on Fedora Core 2 Linux kernel 2.6.6 with performance-optimized Orion drivers Low latency Ethernet protocol stack Single System Imaging (SSI) clustering based on NFS Head node video system with GNOME/X-windows
<b>Development Tools and Libraries</b>	Message passing libraries: Orion-optimized MPI library based on MPICH2, PVM, and LAM Parallel development and HPC tools: compilers, debuggers, and linkers including gcc, distcc, and mpicc, Efficeon-tuned ATLAS math library; FFTW fast Fourier transform Sun Grid Engine (SGE) In-Box Scheduler High Performance Linpack (HPL) Open-Source Parallel BLAST (mpiBLAST)
<b>Ease-of-Use Features</b>	Single-system rapid boot sequence Ganglia cluster monitor with Orion specific extensions Makes a standard Linux cluster into a standalone computer
<b>Performance</b>	230 GFlop peak, 110 GFlop sustained (Linpack)

## Internal Components—DS-96 Deskside

<b>Processors</b>	1.2 GHz x86 microprocessors
<b>Memory</b>	48-96 DIMMS (one per node), 48GB-192GB DDR
<b>Storage</b>	1 to 96 high performance 2.5" disk drives, 20-100GB capacity up to 9.6TB total capacity
<b>Integrated Network</b>	Hardwired Gigabit Ethernet network fabric Private monitoring and control bus (see Hardware Features)
<b>External Network</b>	1 Gigabit Ethernet for local user access Non-blocking switched 10 Gigabit Ethernet backplane with various 10 Gigabit uplink options
<b>External Features: Front</b>	DVD/CD-RW, USB port, status and performance LEDs for each node, and power button
<b>External Features: Back</b>	Power cable connector and toggle switch, network connector, system video, keyboard, mouse, and serial port, stacking connectors (requires separate stacking kit)

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