QUOTATION

![Microway logo - Technology you can count on]

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Quote #	MWYQ8557
Date	10/10/2006

Microway Confidential

Quote To:	Ship To:	Sales Rep.
Florida State University Mickey Boyd	Florida State University Mickey Boyd	John Droege 508.732.5514 johnd@microway.com Fax: 508.746.4678 http://www.microway.com
, (850)644-7167 boyd@math.fsu.edu	, (850)644-7167 boyd@math.fsu.edu	GSA Schedule Number: GS-35F-0431N

Qty	Description	Unit Price	Ext. Price
	Microway is building a dozen clusters or more at any one time. We have built hundreds of custom clusters for universities, government research labs and agencies, and corporations. Microway has been in the scientific computing business since 1982.		
	Microway is pleased to quote the following:		
1	Quad Opteron: Master Node	$8,427	$8,427
	Microway Navion-TD (TM) Quad Opteron Motherboard (S4882-D) four sockets and heatsinks for 800 Series Processors AMD 8131 Hypertransport PCI-X Tunnel AMD 8111 Hypertransport I/O Hub ATI Rage 8MB Integrated Graphics Two 64-bit 133/100MHz PCI-X slots Two 64-bit 66/33MHz PCI-X slots One Legacy 32-bit 33MHz PCI slot Four banks of memory (16 DIMM slots) (supports up to 64GB of 128-bit ECC Registered DDR 400/333) Integrated dual Broadcom 10/100/1000 GbE port Integrated dual LSI U320 SCSI Controller IPMI 1.5 compliant		
	(4) AMD Opteron 870 with 1MB Cache / core 2.0 GHz., 95 watts, stepping E6 (8) 1 GB DDR 400 MHz ECC/Reg Low Profile Memory		
	Microway Navion Quad Opteron 4U Chassis with 24" Slide Rails; 810 Watt N+1 Redundant Hot Swap Power Supply; Slim Line DVD/CD and Floppy Drives; Heat Sinks for Processors; Removable Fan Tray with Fans		
	5 Tray SATA Hard Drive Carrier in 3 bay slots		
	(3) 500 GB Seagate NL35 Nearline SATA/300 (2 mirrored, 1 spare) (16MB/7200rpm/NCQ/1.2MTBF) ST3500641NS 16MB Cache, 3Gb/s, NCQ, 7200rpm, 1.2 million hours MTBF (2) 80 GB Seagate SATA/300 (mirrored os) (8MB/7200rpm/NCQ) ST3808110AS 8MB Cache, 3Gb/s, NCQ, 7200rpm		

CentOS Linux, MPICH, MCMS, Torque, Maui Scheduler installed

| 7 | Quad Opteron: Compute Node | $7,201 | $50,407 |

Navion -4 Way 2U Opteron Server
  Tyan S4881 Server board;
  Up to 64GB PC3200/PC2700 ECC Registered Memory
  Nvidia nForce Pro 2200 and AMD 8131 Hyper Transport PCI-X Tunnel
  Integrated ATI Rage XL With 8MB RAM
  (2) Dual port SATA II controllers integrated (up to 4 drives)
        chassis includes (2) fixed SATA bays
        upgradeable to hot swap
        (1) slim optical bay - DVD-ROM drive installed
        (1) slim floppy bay (drive optional)
        (1) x16 and (1) x4 PCI Express slots low profile
        (1) 64 bit 133 MHz PCI-X low profile slot
        (2) 64 bit 100 MHz PCI-X low profile slots
  (2) Broadcom BCM5704C Gigabit ports
  4 x USB 2.0 ports (2 in front , 2 in rear)
  9 pin Serial port
  PS/2 ports for keyboard and mouse
  850W Power supply
  (4) AMD Opteron 870 with 1MB Cache / core
   2.0 GHz., 95 watts, stepping E6
  (8) 1 GB DDR 400 MHz ECC/Reg Low Profile Memory

80 GB Seagate SATA/300 (8MB/7200rpm/NCQ) ST3808110AS
  8MB Cache, 3Gb/s, NCQ, 7200rpm
CentOS Linux, MPICH, MCMS, Torque, Maui Scheduler installed

Microway Cluster Management Software (MCMS) installed: $no charge

MCMS is a monitoring and control software package that integrates the
tools needed to understand what events are taking place on the cluster and
the tools to control the cluster itself.

The monitoring tools provide the administrator with the capability of
monitoring the cluster from any location via a web based interface. This
allows for checking on the cluster through a web browser and
securelylogging directly to the machine. Once into the monitoring mode,
critical statistics are displayed to you that show global cluster stats, current
load, memory utilization, and which nodes are on or off line. In addition to
the global parameters you can see the same statistics on a local node
basis. The package can be extended from the default parameters to allow
execution of additional tasks that are of interest to the administrator.

The control portion of the package allows the administrator to control the
cluster from the master node. Among those features available are:
Copying files to all nodes
Executing commands on all or a particular node
Testing of rsh connectivity and authorization
Testing TCP/IP networking connectivity
Rebooting the entire cluster or specific nodes
Shutdown of nodes or the cluster in entirety

The combination of these tools allows for extended control of the cluster as
a single unit and gives the administrator the tools he needs to analyze the
usage of the complete system.

| 1 | PGI Workstation for 64/32 bit Academic Version | $699 | $699 |
| 1 | PGI Workstation 64/32 bit 1 year Subscription | $220 | $220 |

Qty	Description	Unit Price	Ext. Price
1	Netgear 16 Port 10/100/1000 Switch	$379	$379
1	Myrinet:	$10,047	$10,047
	Myrinet M3F-SW8 8 port switch		
	(8) Myrinet M3F-PCIXF-2 Interface Card		
	(8) PCI-X 1U Riser 64 bit, 133 MHz Right Angle		
	(8) Molex 3M FIBER CABLE M3F-CB-3M (or appropriate length)		
	Total Price:		$70,179
1	Shipping and Insurance: estimated	$600	$600
	Total Price:		$70,779

Opteron Quad Node Power at 120 VAC: 5 Amps, 575 Watts, 1,962 BTUs/hr

Options:

Qty	Description	Unit Price	Ext. Price
1	Myrinet: 16 port switch with 8 HCA cards and cables	$10,609	$10,609
	Myrinet M3F-SW16		
	(8) Myrinet M3F-PCIXF-2 Interface Card		
	(8) PCI-X 1U Riser 64 bit, 133 MHz Right Angle		
	(8) Molex 3M FIBER CABLE M3F-CB-3M (or appropriate length)		
1	Myrinet: 16 port switch with 7 HCA cards and cables	$9,986	$9,986
	Myrinet M3F-SW16		
	(7) Myrinet M3F-PCIXF-2 Interface Card		
	(7) PCI-X 1U Riser 64 bit, 133 MHz Right Angle		
	(7) Molex 3M FIBER CABLE M3F-CB-3M (or appropriate length)		
1	Intel Fortran Linux Academic 9.0 (upgrade to 9.1 when available)	$280	$280
1	Intel C++ Linux Academic 9.0 (upgrade to 9.1 when available)	$100	$100
1	Microway MPI Link-Checker(TM) Software 16 nodes or less	$695	$695
1	Yearly Maintenance on Microway MPI Link-Checker(TM) Software MPI16	$350	$350
16	NodeWatch™ - Remote Hardware Monitoring Solution	$150	$2,400

Measure, report and record the physical health of each node in your
Microway® cluster. Save valuable sys admin time. NodeWatch monitors fan
speeds, temperatures, and power supply voltages, in addition to providing
physical control over front-panel power and reset inputs. NodeWatch
software delivers critical information remotely via a web-based GUI.
Available on Microway 1U Athlon and 1U Xeon clusters.

Features:
Web-enabled remote cluster status and physical power and reset control.
Automatically monitors up to 5 temperatures, 3 voltages, and 11 fans,
including power supply fans.
User account administration
Out-of-bounds values are displayed uniquely.

Monitors nodes, even those that are powered off.
Entire cluster or individual nodes can be switched on and off, rebooted, and
reset remotely.
Physical measurements integrated by Microway into Ganglia reporting
software.
Common operating system tasks, such as shutdown, are integrated into the
user interface.
Completely independent of motherboard and ethernet. Monitored
information collected via independent 18MHz embedded NodeWatch board
and transmitted via physically independent RS485 serial network. No
software whatsoever needed on slave nodes themselves!
NodeWatch is fully customer configurable and information is delivered
securely through our MCMS™ solution.

Qty	Description	Unit Price	Ext. Price
1	TFS 1U Touchpad Rackmount Monitor	$962	$962
	Quad Processors:		
4	AMD Dual Core Opteron 865 CPU with 1 MB Cache per core	$810	$3,240
4	AMD Dual Core Opteron 870 CPU with 1 MB Cache per core	$1,012	$4,048
4	AMD Dual Core Opteron 875 CPU with 1 MB Cache per core	$1,350	$5,400
4	AMD Dual Core Opteron 880 CPU with 1 MB Cache per core	$1,755	$7,020
4	AMD Dual Core Opteron 885 CPU with 1 MB Cache per core	$2,491	$9,964
1	Infiniband:	$5,424	$5,424

8 Port, 4X InfiniBand SDR Switch, w/ Media Adapter Support

(8) InfiniBand PCI-Express Memfree Single Port SDR HCA (RoHS)
 Lead Free (RoHS compliant)
(8) PCI Express by 8 1U Riser (for compute nodes)

(8) InfiniBand 4x 3 meter equalized

FOB:	Plymouth, Massachusetts USA
Ship Date:	4 - 5 Weeks after receipt of order and documentation
Warranty:	Two years offsite service with replacement components typically cross-shipped within 24 hours of notification of Microway support.
Technical Support:	Lifetime technical support via telephone, fax, or email.
Terms:	NET 30
	The Buyer is responsible for any sales taxes or duties related to the purchase.
Shipping Method:	Best Way
	"Please add contact name and telephone number for delivery on purchase order."

As a full service provider, Microway offers a broad range of commercial and open source applications. This quote includes the installation of open source and commercial applications purchased from Microway onto the cluster. If a compiler is not purchased with this order, the GNU compiler will be installed. Other arrangements are made at the time of purchase to install other compilers not sourced by Microway, but may incur additional charges. Upon receipt of your order, we will request additional information for our assembly, integration, and quality control teams to insure proper configuration and on-time delivery.

Since 1982 Microway has been a leader in providing high performance computing solutions. Microway specializes in building complex clusters, servers, and workstations. We are unique in having Linux expertise throughout our organization to provide testing of all systems at our assembly and integration center at our headquarters in Plymouth, Massachusetts. One of the earliest, authorized Myricom resellers, Microway has extensive expertise in configuring and validating Myrinet connected clusters. Our validation suite includes a number of MPI applications plus the Department of Commerce Fortran Suite.

We accept VISA, Master Card, Discover, university and government purchase orders, or wire transfer. Wire transfer instructions are provided when requested.

Microway is classified as a small business - woman owned and operated.

Microway welcomes our customers (and potential customers) to personally visit our manufacturing facility. We value the opportunity to share our understanding of the systems we build, and to demonstrate our dedication to quality in our design, fabrication, final testing and technical support. Please contact me if you plan to be in or near Massachusetts and would like to make an appointment.

This quote is valid for 30 days.

Prices subject to review at time of order due to short term memory price volatility.