



SPEC[®] MPIM2007 Result

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QLogic, TeamHPC

QLogic Benchmark Cluster
with TeamHPC compute nodes

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

MPI2007 license: 0018

Test sponsor: QLogic Corporation

Tested by: QLogic Performance Engineering

Test date: Jul-2008

Hardware Availability: May-2008

Software Availability: Jul-2008

Ranks
104.milc
107.leslie3d
113.GemsFDTD
115.fds4
121.pop2
122.tachyon
126.lammps
127.wrf2
128.GAPgeofem
129.tera_tf
130.socorro
132.zeusmp2
137.lu

Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	96	NC	NC	NC	NC	NC	NC									
107.leslie3d	96	NC	NC	NC	NC	NC	NC									
113.GemsFDTD	96	NC	NC	NC	NC	NC	NC									
115.fds4	96	NC	NC	NC	NC	NC	NC									
121.pop2	96	NC	NC	NC	NC	NC	NC									
122.tachyon	96	NC	NC	NC	NC	NC	NC									
126.lammps	96	NC	NC	NC	NC	NC	NC									
127.wrf2	96	NC	NC	NC	NC	NC	NC									
128.GAPgeofem	96	NC	NC	NC	NC	NC	NC									

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



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Results Table (Continued)

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
129.tera_tf	96	NC	NC	NC	NC	NC	NC							
130.socorro	96	NC	NC	NC	NC	NC	NC							
132.zeusmp2	96	NC	NC	NC	NC	NC	NC							
137.lu	96	NC	NC	NC	NC	NC	NC							

Results appear in the order in which they were run. Bold underlined text indicates median measurement.

Hardware Summary

Type of System: Homogeneous
 Compute Node: TeamHPC RM2UDSEB-DG
 Interconnect: QLogic InfiniBand HCAs and switches
 File Server Node: FusionSA
 Head Node: FusionSA
 Total Compute Nodes: 12
 Total Chips: 24
 Total Cores: 96
 Total Threads: 96
 Total Memory: 192 GB
 Base Ranks Run: 96
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

Compiler: Intel C Compiler for Linux
 Version 10.1, Build 20080312
 C++ Compiler: Intel C++ Compiler for Linux
 Version 10.1, Build 20080312
 Fortran Compiler: Intel Fortran Compiler for Linux
 Version 10.1, Build 20080312
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: QLogic MPI 2.2
 Other MPI Info: None
 Pre-processors: No
 Other Software: QLogic InfiniPath 2.2 (OFED 1.3)

Node Description: TeamHPC RM2UDSEB-DG

Hardware

Number of nodes: 12
 Uses of the node: compute
 Vendor: TeamHPC
 Model: RM2UDSEB-DG (as DSEB-DG motherboard)
 CPU Name: Intel Xeon E5472
 CPU(s) orderable: 1-2 chips
 Chips enabled: 1
 Cores enabled: 8
 Cores per chip: 4
 Threads: 1
 CPU Characteristics: Quad-Core, 3.0GHz, 1600MHz FSB
 CPU MHz: 3000
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8x2GB PC2-6400 FB-DIMMs)
 Disk Subsystem: 1 x 80GB SATA II with 8MB cache
 Other Hardware: None

Software

Adapter: QLogic QLE7280 InfiniBand DDR
 (PCIe x16 Gen1 2.5 GT/s)
 Adapter Driver: QLogic InfiniPath 2.2 (OFED 1.3)
 Adapter Firmware: None
 Operating System: CentOS release 5 (x86_64)
 Kernel 2.6.18-53.1.14.el5
 Local File System: ext3
 Shared File System: NFSv3 IPoIB
 System State: Multi-user, run level 3
 Other Software: None

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Node Description: TeamHPC RM2U SEB-1G

Adapter: QLogic QLE7280 InfiniBand DDR
(PCIe x16 Gen1 2.5 GT/s)

Number of Adapters: 1

Slot Type: PCIe x16 Gen2

Data Rate: InfiniBand 4x DDR

Ports Used: 1

Interconnect Type: InfiniBand

Node Description: FusionSA

Hardware		Software	
Number of nodes:	1	Adapter:	QLogic QLE7240 InfiniBand DDR (PCIe x8 Gen1 2.5 GT/s)
Uses of the node:	head, file server	Adapter Driver:	QLogic InfiniPath 2.2 (OFED 1.3)
Vendor:	Western Scientific	Adapter Firmware:	None
Model:	FusionSA (storage appliance) with Tyan Thunder n6650W (S2900) motherboard and LSI Logic MegaRAID SAS 3040SE RAID controller	Operating System:	Red Hat Enterprise Linux AS release 4 (Update 5) Kernel 2.6.9-55.ELsmp
CPU Name:	AMD Opteron 2218	Local File System:	Software RAID 0, ext3
CPU(s) orderable:	1,2 chip	Shared File System:	None
Chips enabled:	2	System State:	Multi-User
Cores enabled:	4	Other Software:	None
Cores per chip:	2		
Threads per core:	1		
CPU Characteristics:	--		
CPU MHz:	2600		
Primary Cache:	64 KB I+D on chip per core		
Secondary Cache:	1 MB I+D on chip per core		
L3 Cache:	None		
Other Cache:	None		
Memory:	16 GB (8 x 2 GB PC2-5300 ECC)		
Disk Subsystem:	8 x 7.5 GB SAS 15K RPM		
Other Hardware:	None		
Adapter:	QLogic QLE7240 InfiniBand DDR (PCIe x8 Gen1 2.5 GT/s)		
Number of Adapters:	1		
Slot Type:	PCIe x16 Gen1 (x8 signal)		
Data Rate:	InfiniBand 4x DDR		
Ports Used:	1		
Interconnect Type:	InfiniBand		



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Interconnect Description: QLogic InfiniBand HCAs and switches

	Hardware	Software
Vendor:	QLogic	
Model:	QLogic 7200 Series TrueScale HCAs,	
Switch Model:	QLogic SilverStorm 9024 Switch	
Number of Switches:	1	
Number of Ports:	24	
Data Rate:	InfiniBand 4x DDR	
Firmware:	Switch chassis: firmware version 4.2 Switch silicon: Anafa II Firmware 1.0.4	
Topology:	Star, one switch	
Primary Use:	MPI, file server	

General Notes

Required alternate sources:
 129.tera_tf: fixbuffer
 Alternate source:
 104.milc: calloc
 Enabled 4K IB MTUs with QLogic SilverStorm 9024 switch
 parameter setting "ismChassisSetMtu 5"
 BIOS parameter Snoop Filter set to "Disabled" on the compute nodes
 The mpirun rcfile contained "ulimit -s unlimited"

Base Compiler Invocation

C benchmarks:
 /usr/bin/mpicc -cc=icc
 C++ benchmarks:
 /usr/bin/mpicxx -CC=icpc
 Fortran benchmarks:
 /usr/bin/mpif90 -f90=ifort
 Benchmarks using both Fortran and C:
 /usr/bin/mpicc -cc=icc /usr/bin/mpif90 -f90=ifort

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG
 127.wrf2: -DSPEC_MPI_LINUX -DSPEC_MPI_CASE_FLAG



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Base Optimization Flags

C benchmarks:

-O3 -ipo -xT -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xT

Fortran benchmarks:

-O3 -ipo -xT -no-prec-div

Benchmarks using both Fortran and C:

-O3 -ipo -xT -no-prec-div

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/QLogic_Core_Intel101_flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/QLogic_Core_Intel101_flags.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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