SPEC® MPIM2007 Result

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QLogic, TeamHPC

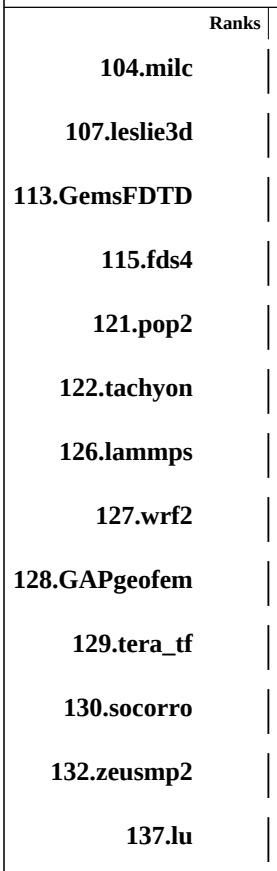
QLogic Benchmark Cluster
with TeamHPC compute nodes

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



Non-Compliant

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 a 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 (Dual DSEB-DG motherboard)
CPU Name:	Intel Xeon E5472
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	8
Cores per chip:	4
Threads per core:	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-DG

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

Number of nodes:	1
Uses of the node:	head, file server
Vendor:	Western Scientific
Model:	FusionSA (storage appliance) with Tyan Thunder n6650W (S2915) motherboard and LSI Logic MegaRAID SAS 8408E RAID controller
CPU Name:	AMD Opteron 2218
CPU(s) orderable:	1,2 chip
Chips enabled:	2
Cores enabled:	4
Cores per chip:	2
Threads per core:	1
CPU Characteristics:	--
CPU MHz:	2600
Primary Cache:	64 KB I + 64 KB 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 73 GB SAS 3Gb/s 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

Software

Adapter:	QLogic QLE7240 InfiniBand DDR (PCIe x8 Gen1 2.5 GT/s)
Adapter Driver:	QLogic InfiniPath 2.2 (OFED 1.3)
Adapter Firmware:	None
Operating System:	Red Hat Enterprise Linux AS release 4 (Update 5) Kernel 2.6.9-55.ELsmp
Local File System:	Software RAID 0, ext3
Shared File System:	None
System State:	Multi-User
Other Software:	None

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Interconnect Description: QLogic InfiniBand HCAs and switches

Hardware	
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

Software

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:

126.lammps: /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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