SPEC® MPIM2007 Result

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Linux Networx

LS-1,
Scali MPI Connect 5.6.1,
PathScale 3.0 compilers

SPECmpiM_peak2007 = Not Run

SPECmpiM_base200[illegible] = NC

MPI2007 license: 021
Test sponsor: Scali, Inc
Tested by: Scali, Inc

Test date: Feb-2008
Hardware Availability: Sep-2007
Software Availability: Feb-2008

Non-Compliant

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	128	NC	NC	NC	NC	NC	NC							
107.leslie3d	128	NC	NC	NC	NC	NC	NC							
113.GemsFDTD	128	NC	NC	NC	NC	NC	NC							
115.fds4	128	NC	NC	NC	NC	NC	NC							
121.pop2	128	NC	NC	NC	NC	NC	NC							
122.tachyon	128	NC	NC	NC	NC	NC	NC							
126.lammps	128	NC	NC	NC	NC	NC	NC							
127.wrf2	128	NC	NC	NC	NC	NC	NC							
128.GAPgeofem	128	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	128	NC	NC	NC	NC	NC	NC							
130.socorro	128	NC	NC	NC	NC	NC	NC							
132.zeusmp2	128	NC	NC	NC	NC	NC	NC							
137.lu	128	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:	Homogenous
Compute Node:	Linux Networx LS-1
Interconnect:	InfiniBand
File Server Node:	Linux Networx LS1 I/O Nodes
Total Compute Nodes:	32
Total Chips:	64
Total Cores:	128
Total Threads:	128
Total Memory:	256 GB
Base Ranks Run:	128
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	PathScale C Compiler 3.0
C++ Compiler:	PathScale C++ Compiler 3.0
Fortran Compiler:	PathScale Fortran Compiler 3.0
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
MPI Library:	Scali MPI Connect 5.6.1-58818
Other MPI Info:	IB Gold VAPI
Pre-processors:	None
Other Software:	None

Node Description: Linux Networx LS-1

Hardware

Number of nodes:	32
Uses of the node:	compute
Vendor:	Linux Networx, Inc
Model:	LS-1
CPU Name:	Intel Xeon 51
CPU(s) orderable:	1-2 chip
Chips enabled:	2
Cores enabled:	
Cores per chip:	2
Threads per core:	1
CPU [illegible]:	1333 Mhz FSB
CPU MHz:	3000
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (8 x 1GB DIMMs 667 MHz)
Disk Subsystem:	250GB SAS hard drive
Other Hardware:	None
Adapter:	Mellanox MHGA28-XTC PCI-Express DDR InfiniBand HCA

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Software

Adapter:	Mellanox MHGA28-XTC PCI-Express DDR InfiniBand HCA
Adapter Driver:	IBGD 1.8.2
Adapter Firmware:	5.1.4
Operating System:	SLES9 SP3
Local File System:	Not applicable
Shared File System:	GPFS
System State:	multi-user
Other Software:	None

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Hardware Availability: Sep-2007
Software Availability: Feb-2008

Node Description: Linux Networx LS-1

Number of Adapters:	1
Slot Type:	PCIe x8
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	Infiniband

Node Description: Linux Networx LS1 I/O Nodes

Hardware

Number of nodes:	8
Uses of the node:	file server
Vendor:	Linux Networx, Inc.
Model:	LS1
CPU Name:	Intel Xeon 5150
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	4
Cores per chip:	2
Threads per core:	1
CPU Characteristics:	1333 Mhz FSB
CPU MHz:	2660
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	4 GB (4 x 1GB DIMMs 667 MHz)
Disk Subsystem:	18 TB SAN interconnected by FC4
Other Hardware:	None
Adapter:	Mellanox MHGA28-XTC PCI-X DDR InfiniBand HCA
Number of Adapters:	1
Slot Type:	PCIe x8
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

Software

Adapter:	Mellanox MHGA28-XTC PCI-X DDR InfiniBand HCA
Adapter Driver:	IBGD 1.8.2
Adapter Firmware:	5.2.0
Operating System:	SLES9 SP3
Local File System:	Not applicable
Shared File System:	GPFS
System State:	multi-user
Other Software:	None

Interconnect Description: InfiniBand

Hardware

Vendor:	QLogic
Model:	QLogic Silverstorm 9120 Fabric Director
Switch Model:	9120
Number of Switches:	1
Number of Ports:	144

Software

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Interconnect Description: InfiniBand

Data Rate:	InfiniBand 4x SDR and InfiniBand 4x DDR
Firmware:	4.1.1.1.11
Topology:	Single switch (star)
Primary Use:	MPI and filesystem traffic

General Notes

```
The following approved srcalts are used
   tera_tf - fixbuffer
   wrf2    - fixcalling
```

Base Compiler Invocation

C benchmarks:
```
/opt/scali/bin/mpicc  -ccl pathcc
```

C++ benchmarks:

126.lammps: `/opt/scali/bin/mpicc  -ccl pathCC`

Fortran benchmarks:
```
/opt/scali/bin/mpif77 -ccl pathf90
```

Benchmarks using both Fortran and C:
```
/opt/scali/bin/mpicc -ccl pathcc /opt/scali/bin/mpif77 -ccl pathf90
```

Base Portability Flags

```
104.milc: -DSPEC_MPI_LP64
1[illegible]fds4: -DSPEC_MPI_LC_TRAILING_DOUBLE_UNDERSCORE -DSPEC_MPI_LP64
121.pop2: -DSPEC_MPI_DOUBLE_UNDERSCORE -DSPEC_MPI_LP64
[illegible] -DSPEC_MPI_LP64
[illegible]F2CSTYLE -DSPEC_MPI_DOUBLE_UNDERSCORE -DSPEC_MPI_LINUX
          -DSPEC_MPI_LP64
128.GAPgeofem: -DSPEC_MPI_LP64
[illegible]socorro: -fno-second-underscore -DSPEC_MPI_LP64
132.zeusmp2: -DSPEC_MPI_LP64
```

Base Optimization Flags

C benchmarks:
```
-march=core -O3 -OPT:Ofast
```

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Base Optimization Flags (Continued)

C++ benchmarks:

126.lammps: `-march=core -O3 -OPT:Ofast -CG:local_fwd_sche[illegible]on`

Fortran benchmarks:
`-march=core -O3 -OPT:Ofast -LANG:copyinout=off`

Benchmarks using both Fortran and C:
`-march=core -O3 -OPT:Ofast -LANG:copyinou[illegible]ff`

The flags files that were used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/MPI2007_[illegible]s.20[illegible]0611.html
http://www.spec.org/mpi2007/flags/MPI200[illegible]_flag[illegible]0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/mpi2007/flags/MPI2007_flags.200806[illegible]xml
http://www.spec.org/mpi2007/flags/MPI200[illegible]_flags.0.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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