SPEC® MPIM2007 Result

Linux Networx

LS-1,
Scali MPI Connect 5.6.1,
Intel 10.1 compilers

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

MPI2007 license:	021	**Test date:**	Feb-2008
Test sponsor:	Scali, Inc	**Hardware Availability:**	Sep-2007
Tested by:	Scali, Inc	**Software Availability:**	Feb-2008

SPEC has determined that this result was not in compliance with the SPEC MPI2007 run and reporting rules. Specifically, the result did not meet the requirement for baseline optimization flags to not use assertion flags (the flag -fno-alias is a violation of this rule). The result was found to be performance neutral compared to runs without -fno-alias. Replacement results could not be produced because of system access limitations.

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

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Results Table

	Base							Peak						
Benchmark	**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							
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 a 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:	Intel C Compiler 10.1 for Linux (10.1.008)
C++ Compiler:	Intel C++ Compiler 10.1 for Linux (10.1.008)
Fortran Compiler:	Intel Fortran Compiler 10.1 for Linux (10.1.008)
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

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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 5160
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:	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
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-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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Tested by: Scali, Inc

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

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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

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Interconnect Description: InfiniBand

Hardware

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

Software

General Notes

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

Base Compiler Invocation

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

C++ benchmarks:

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

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

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

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Base Portability Flags

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

Base Optimization Flags

C benchmarks:
`-O3 -no-prec-div -fno-alias -xT`

C++ benchmarks:

126.lammps: `-O3 -no-prec-div -fno-alias -xT`

Fortran benchmarks:
`-O3 -no-prec-div -fno-alias -xT`

Benchmarks using both Fortran and C:
`-O3 -no-prec-div -fno-alias -xT`

The flags files that were used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/MPI2007_flags.20080611.html
http://www.spec.org/mpi2007/flags/MPI2007_flags.0.20080611.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/mpi2007/flags/MPI2007_flags.20080611.xml
http://www.spec.org/mpi2007/flags/MPI2007_flags.0.20080611.xml

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Non-Compliant

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

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