



SPEC® MPIM2007 Result

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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 sponsor: Scali, Inc
Tested by: Scali, Inc

Test date: Feb-2008
Hardware Availability: Sep-2007
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
132.zeus_np2
137.lu

Non-Compliant



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Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	64	NC	NC	NC	NC	NC	NC									
107.leslie3d	64	NC	NC	NC	NC	NC	NC									
113.GemsFDTD	64	NC	NC	NC	NC	NC	NC									
115.fds4	64	NC	NC	NC	NC	NC	NC									
121.pop2	64	NC	NC	NC	NC	NC	NC									
122.tachyon	64	NC	NC	NC	NC	NC	NC									
126.lammps	64	NC	NC	NC	NC	NC	NC									
127.wrf2	64	NC	NC	NC	NC	NC	NC									
128.GAPgeofem	64	NC	NC	NC	NC	NC	NC									
129.tera_tf	64	NC	NC	NC	NC	NC	NC									
130.socorro	64	NC	NC	NC	NC	NC	NC									
132.zeusmp2	64	NC	NC	NC	NC	NC	NC									
137.lu	64	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: 16
 Total Chips: 32
 Total Cores: 64
 Total Threads: 64
 Total Memory: 128 GB
 Base Ranks Run: 64
 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 Networkx LS-1

Hardware		Software	
Number of nodes:	16	Adapter:	Mellanox MHGA28-XTC
Uses of the node:	compute		PCI-Express DDR InfiniBand HCA
Vendor:	Linux Networkx, Inc.	Adapter Driver:	IBGD 1.8.2
Model:	LS-1	Adapter Firmware:	5.1.4
CPU Name:	Intel Xeon 5160	Operating System:	SLES9 SP3
CPU(s) orderable:	1-2 chips	Local File System:	Not applicable
Chips enabled:	2	Shared File System:	GPFS
Cores enabled:	4	System State:	multi-user
Cores per chip:	2	Other Software:	None
Threads per core:	1		
CPU Characteristics:	1333 Mhz FSB		
CPU MHz:	3000		
Primary Cache:	32 KB I-Cache, 32 KB D-Cache on chip per core		
Secondary Cache:	4 MB L2-Cache on chip per chip		
L3 Cache:	None		
Other Cache:	None		
Memory:	8 GB (4 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:	PCIe x8		
Data Rate:	InfiniBand 4x DDR		
Ports Used:	1		
Interconnect Type:	Infiniband		



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Node Description: Linux Networx LS1 I/O Nodes

Hardware		Software	
Number of nodes:	8	Adapter:	Mellanox MHGA28-XTC
Uses of the node:	file server		PCI-X DDR InfiniBand HCA
Vendor:	Linux Networx, Inc.	Adapter Driver:	IBGD 1.8.2
Model:	LS1	Adapter Firmware:	5.2.0
CPU Name:	Intel Xeon 5150	Operating System:	SLES9 SP3
CPU(s) orderable:	1-2 chips	Local File System:	Not applicable
Chips enabled:	2	Shared File System:	GPFS
Cores enabled:	4	System State:	multi-user
Cores per chip:	2	Other Software:	None
Threads per core:	1		
CPU Characteristics:	1333 Mhz FSB		
CPU MHz:	2660		
Primary Cache:	32 KB I-Cache, 32 KB D-Cache on chip per core		
Secondary Cache:	4 MB L2 on chip per chip		
L3 Cache:	None		
Other Cache:	None		
Memory:	4 GB 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:	PCIe x8		
Data Rate:	InfiniBand 4x DDR		
Ports Used:	1		
Interconnect Type:	InfiniBand		



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Interconnect Description: InfiniBand

	Hardware	Software
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	

General Notes

The following approved compilers are used
tera_tf - fixbugger
wrf2 - fixcalling

Base Compiler Invocation

```
/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

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

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