SPEC® MPIM2007 Result

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IBM

iDP (Intel Xeon L5420, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

MPI2007 license: 45
Test sponsor: Indiana University
Tested by: Scott Teige

Test date: Apr-2009
Hardware Availability: Sep-2008
Software Availability: Jan-2009

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	512	NC	NC	NC	NC	NC	NC							
107.leslie3d	512	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
113.GemsFDTD	512	NC	NC	NC	NC	NC	NC							
115.fds4	512	NC	NC	NC	NC	NC	NC							
121.pop2	512	NC	NC	NC	NC	NC	NC							
122.tachyon	512	NC	NC	NC	NC	NC	NC							
126.lammps	512	NC	NC	NC	NC	NC	NC							
127.wrf2	512	NC	NC	NC	NC	NC	NC							
128.GAPgeofem	512	NC	NC	NC	NC	NC	NC							
129.tera_tf	512	NC	NC	NC	NC	NC	NC							
130.socorro	512	NC	NC	NC	NC	NC	NC							
132.zeusmp2	512	NC	NC	NC	NC	NC	NC							
137.lu	512	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:	iDP node
Interconnect:	Gigabit Ethernet
	IB Switch
Total Compute Nodes:	64
Total Chips:	128
Total Cores:	512
Total Threads:	512
Total Memory:	2 TB
Base Ranks Run:	512
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Compiler 10.1 for Linux (10.1.013)
C++ Compiler:	Intel C++ Compiler 10.1 for Linux (10.1.013)
Fortran Compiler:	Intel Fortran Compiler 10.1 for Linux (10.1.013)
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	OpenMPI 1.3.1
Other MPI Info:	None
Pre-processors:	No
Other Software:	None

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Node Description: iDP node

Hardware

Number of nodes:	64
Uses of the node:	compute
Vendor:	IBM
Model:	System x iDataPlex dx340
CPU Name:	Intel Xeon L5420
CPU(s) orderable:	1-2 chips
Chips enabled:	2
Cores enabled:	8
Cores per chip:	4
Threads per core:	1
CPU Characteristics:	1333 MHz FSB
CPU MHz:	2500
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, [illegible]MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (FBDIM[illegible] 8x4-GB 667 MHz)
Disk Subsystem:	Weste[illegible]tal 160 GB S[illegible] WD160YS-23SHBO
Other Hardware:	None
Adapter:	In[illegible]rporatio[illegible]0003ES2LAN Gigabit Ethernet Contro[illegible]Copper[illegible]ev 01)
Number of Adapters:	2
Slot Type:	--
Data Rate:	[illegible]igabit E[illegible]nernet
Ports Used:	1
Interconnect Type:	Ethernet
Ada[illegible]	[illegible]ellanox Technologies MT26418 [ConnectX IB DDR, [illegible]e 2.0 5GT/s] (rev a0)
Numbe[illegible]f Adapters:	1
Slot Type:	PCIe x8 Gen2
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

Software

A[illegible]ter:	Intel Corporation 80003ES2LAN Gigabit Ethernet Controller (Copper) (rev 01)
Adapte[illegible]river:	OS default (e1000, v7.3.20-k2-NAPI)
A[illegible]pter Firmware:	2.4-0
Ad[illegible]ter:	Mellanox Technologies MT26418 [ConnectX IB DDR, PCIe 2.0 5GT/s] (rev a0)
Ad[illegible]pter Driver:	OFED 1.3.1
Adapter Firmware:	2.5.0
Operating System:	RedHat ELv 4.7 2.6.9-67.0.22.EL_lustre.1.6.7custom
Local File System:	Linux/ext3
Shared File System:	IBM N5500 NAS via NFSv3
System State:	Multi-User
Other Software:	--

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Interconnect Description: Gigabit Ethernet

Hardware		Software
Vendor:	ProCurve Networking	
Model:	HP ProCurve Switch 5406zl Intelligent Edge J8697A	
Switch Model:	HP ProCurve Switch 5406zl Intelligent Edge J869[illegible]	
Number of Switches:	1	
Number of Ports:	144	
Data Rate:	1Gbps Ethernet	
Firmware:	--	
Topology:	Single switch	
Primary Use:	Cluster File System	

Interconnect Description: IB Switch

Hardware		Software
Vendor:	Cisco	
Model:	Cisco SFS 7024[illegible]	
Switch Model:	Cisco SFS 7024D	
Number of Switches:	1	
Number of Ports:	[illegible]	
Data Rate:	InfiniBand 4x DDR	
Firmware:	4.1.1.1.1[illegible]	
Topology:	Single switch	
Primary Use:	MPI traffic	

Submit Notes

```
The config file option 'submit' was used.
```

Base Compiler Invocation

C benchmarks:

```
mpicc
```

Continued on next page

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Base Compiler Invocation (Continued)

C++ benchmarks:

126.lammps: `mpic++`

Fortran benchmarks:
`mpif90`

Benchmarks using both Fortran and C:
`mpicc mpif90`

Base Portability Flags

121.pop2: `-DSPEC_MPI_CASE_FLAG`
126.lammps: `-DMPICH_IGNORE_CXX_SEEK`
127.wrf2: `-DSPEC_MPI_LINUX -DSPEC_MPI_CASE_FLAG`

Base Optimization Flags

C benchmarks:
`-O3 -xT -ipo -no-prec-div`

C++ benchmarks:

126.lammps: `-O3 -xT -ipo -no-prec-div`

Fortran benchmarks:
`-O3 -xT -ipo -no-prec-div`

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

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The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20090520.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20090520.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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