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 date:** Apr-2009
Test sponsor: Indiana University	**Hardware Availability:** Sep-2008
Tested by: Scott Teige	**Software Availability:** Jan-2009

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

Non-Compliant

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
Interconnects:	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, 6 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	32 GB (FBDIMM 8x4-GB 667 MHz)
Disk Subsystem:	Western Digital 160 GB SATA WD160YS-23SHB0
Other Hardware:	None
Adapter:	Intel Corporation 80003ES2LAN Gigabit Ethernet Controller (Copper) (rev 01)
Number of Adapters:	2
Slot Type:	--
Data Rate:	Gigabit Ethernet
Ports Used:	1
Interconnect Type:	Ethernet
Adapter:	Mellanox Technologies MT26418 [ConnectX IB DDR, PCIe 2.0 5GT/s] (rev a0)
Number of Adapters:	1
Slot Type:	PCIe x8 Gen2
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

Software

Adapter:	Intel Corporation 80003ES2LAN Gigabit Ethernet Controller (Copper) (rev 01)
Adapter Driver:	OS default (e1000, v7.3.20-k2-NAPI)
Adapter Firmware:	2.4-0
Adapter:	Mellanox Technologies MT26418 [ConnectX IB DDR, PCIe 2.0 5GT/s] (rev a0)
Adapter 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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Test date: Apr-2009
Hardware Availability: Sep-2008
Software Availability: Jan-2009

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 J8697A	
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 7024D	
Switch Model: Cisco SFS 7024D	
Number of Switches: 1	
Number of Ports: 288	
Data Rate: InfiniBand 4x DDR	
Firmware: 4.1.1.1.1.	
Topology: Single switch	
Primary Use: MPI traffic	

Submit Notes

The config file option 'submit' was used.

Base Compiler Invocation

C benchmarks:
    mpicc

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Tested by:	Scott Teige	**Software Availability:**	Jan-2009

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 other inquiries, please contact webmaster@spec.org.

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