



# SPEC® MPIM2007 Result

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IBM

SPECmpiM\_peak2007 = Not Run

iDP (Intel Xeon L5420, 2.50 GHz)

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

- Ranks
- 104.milc
- 107.leslie3d
- 113.GemsFDTD
- 115.fds4
- 121.pop2
- 122.tachyon
- 126.lammmps
- 127.wrf2
- 128.GAPgeofem
- 129.tera\_tf
- 130.soc
- 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	128	NC	NC	NC	NC	NC	NC							
107.leslie3d	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		
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: Homogeneous  
Compute Node: iDP node  
Interconnect: Gigabit Ethernet  
Switch  
Total Compute Nodes: 16  
Total Chips: 32  
Total Ranks: 128  
Total Threads: 128  
Total Memory: 512 GB  
Base Ranks per Node: 128  
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

### Software

Number of nodes: 16  
 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, 4 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-23SHBO  
 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

Adapter: Intel Corporation 80003ES2LAN Gigabit Ethernet Controller (Copper) (rev 01)  
 Adapter Driver: OS default (e1000, v7.3.20-k2-NAPI) 2.4-0  
 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 EL v4.7  
 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: lustre 1.6.7 kernel patches



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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 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 7024	
Switch Model: Cisco SFS 7024D	
Number of Switches: 1	
Number of Ports: 200	
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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## Base Compiler Invocation (Continued)

C++ benchmarks:

126.lammps: mpicxx

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.20090520.00.html](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20090520.00.html)

You can also download the XML flags source by saving the following link:  
[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.20090520.00.xml](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20090520.00.xml)

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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