



# SPEC® MPIM2007 Result

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## IBM

SPECmpiM\_peak2007 = Not Run

### iDP (Intel Xeon L5420, 2.50 GHz)

SPECmpiM\_base2007 = 28.0

MPI2007 license: 3440

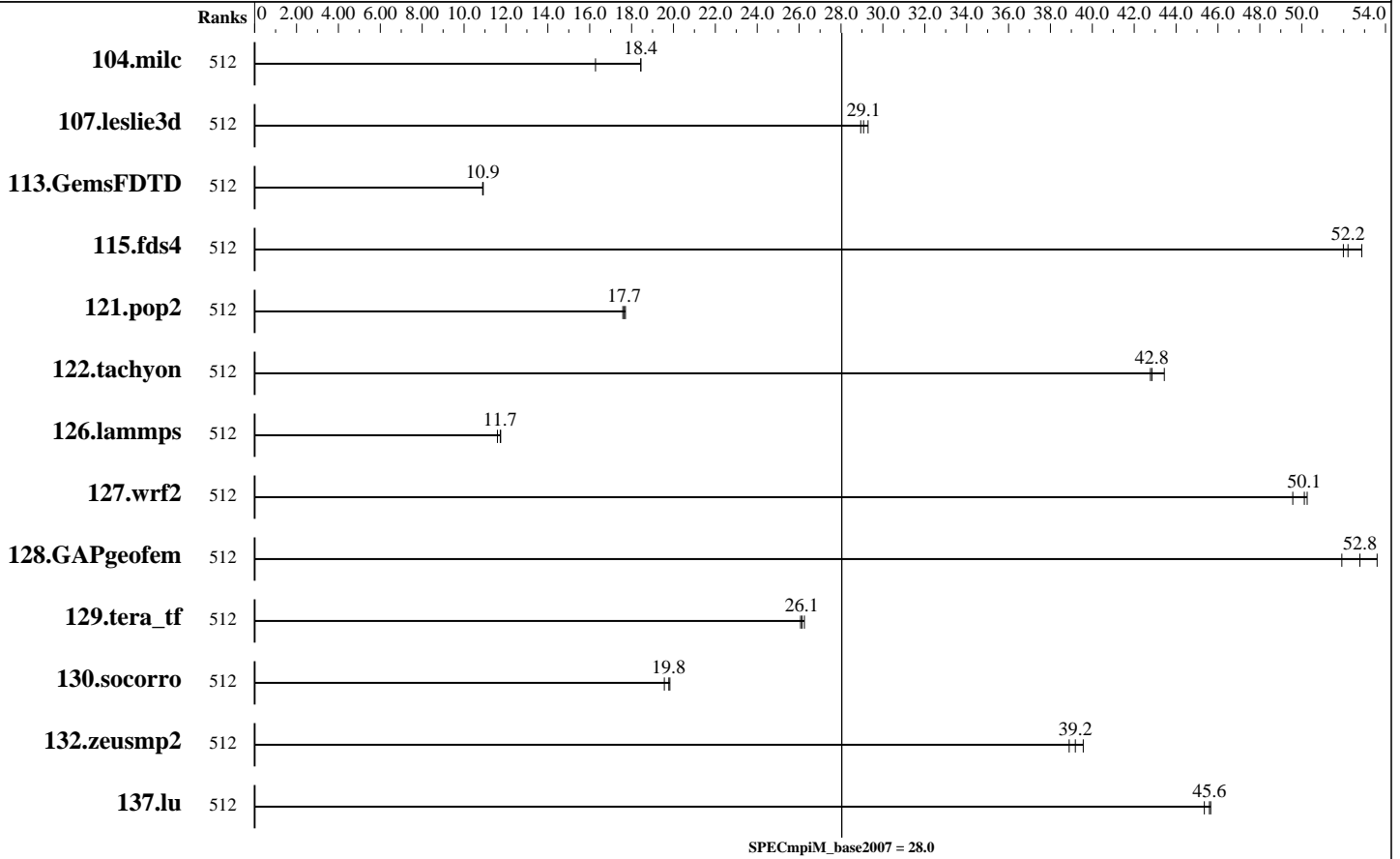
Test sponsor: Indiana university

Tested by: Scott Teige

Test date: Apr-2009

Hardware Availability: Sep-2008

Software Availability: Jan-2009



## Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	512	96.1	16.3	84.8	18.4	<b>84.9</b>	<b>18.4</b>									
107.leslie3d	512	178	29.3	180	28.9	<b>180</b>	<b>29.1</b>									
113.GemsFDTD	512	<b>579</b>	<b>10.9</b>	578	10.9	579	10.9									
115.fds4	512	<b>37.4</b>	<b>52.2</b>	36.9	52.9	37.5	52.0									
121.pop2	512	233	17.7	<b>234</b>	<b>17.7</b>	235	17.6									
122.tachyon	512	64.4	43.4	65.4	42.8	<b>65.3</b>	<b>42.8</b>									
126.lammps	512	248	11.7	<b>248</b>	<b>11.7</b>	251	11.6									
127.wrf2	512	<b>156</b>	<b>50.1</b>	155	50.3	157	49.6									
128.GAPgeofem	512	38.5	53.6	<b>39.1</b>	<b>52.8</b>	39.8	51.9									
129.tera_tf	512	106	26.1	<b>106</b>	<b>26.1</b>	105	26.3									

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		
130.socorro	512	193	19.8	<b><u>193</u></b>	<b><u>19.8</u></b>	195	19.6									
132.zeusmp2	512	78.4	39.6	79.8	38.9	<b><u>79.2</u></b>	<b><u>39.2</u></b>									
137.lu	512	80.5	45.7	81.1	45.3	<b><u>80.6</u></b>	<b><u>45.6</u></b>									

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: Intel MPI 3.1  
Other MPI Info: None  
Pre-processors: No  
Other Software: OFED 1.4 compat-dapl-1.2.13  
Intel MPI Library 3.1 for Linux Multi-Purpose Daemon (MPD)

## 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-23SHBO  
Other Hardware: None  
Adapter: Intel Corporation 80003ES2LAN Gigabit Ethernet Controller (Copper) (rev 01)  
Number of Adapters: 2  
Slot Type: --  
Data Rate: Gigabit Ethernet

### 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: Red Hat 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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## Node Description: iDP node

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

## 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:	I/O traffic	

## 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:	4.1.1.1.11	
Topology:	Single switch	
Primary Use:	MPI traffic	

## Submit Notes

The config file option 'submit' was used.



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## Base Compiler Invocation

C benchmarks:

mpiicc

C++ benchmarks:

126.lammps: mpiicpc

Fortran benchmarks:

mpiifort

Benchmarks using both Fortran and C:

mpiicc mpiifort

## 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

The flags file that was used to format this result can be browsed at

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.html](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.xml](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.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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