



# SPEC<sup>®</sup> MPIM2007 Result

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## Intel Corporation

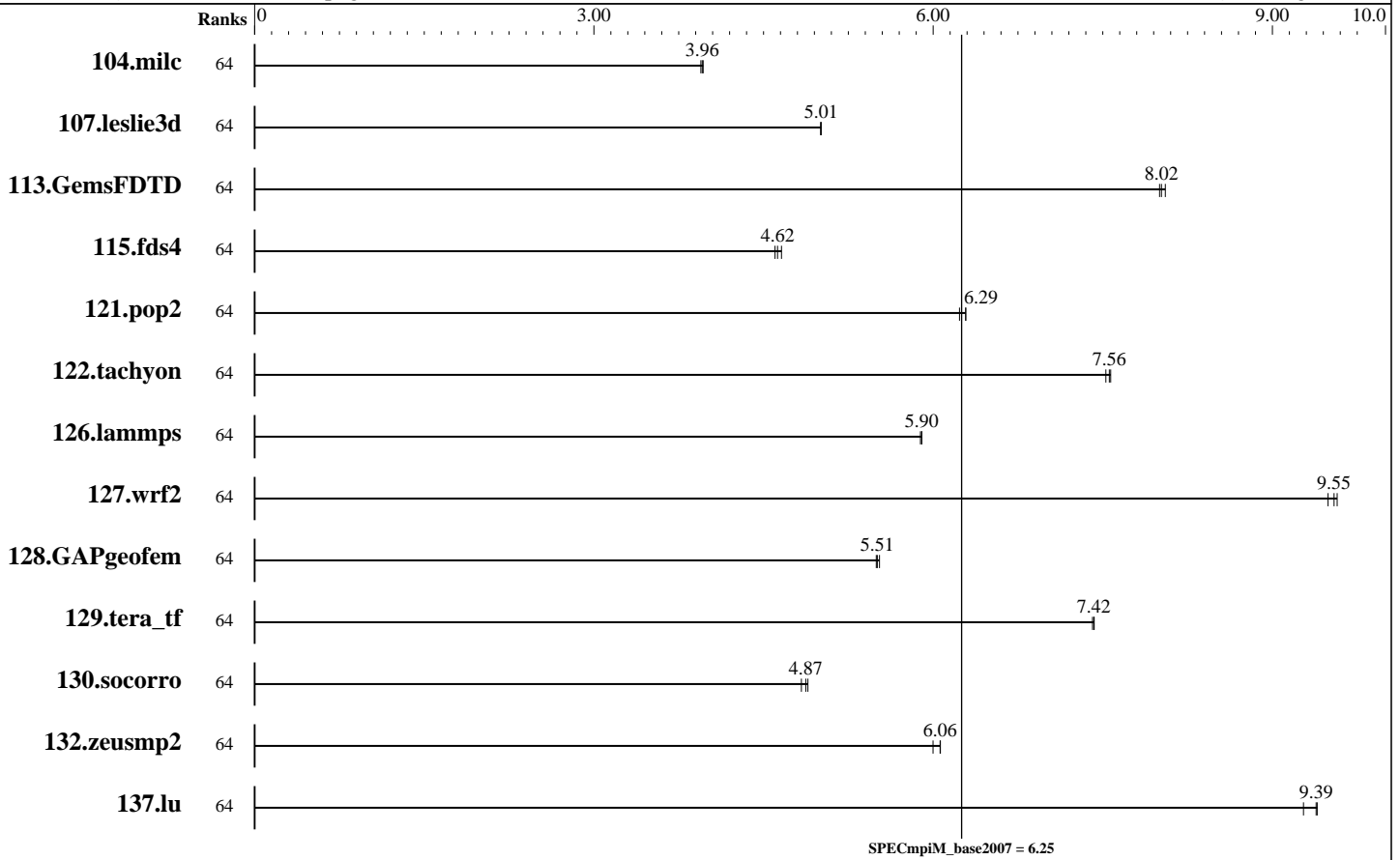
SPECmpiM\_peak2007 = Not Run

### Endeavor (Intel Xeon E5462, 2.80 GHz)

SPECmpiM\_base2007 = 6.25

MPI2007 license: 13  
Test sponsor: Intel Corporation  
Tested by: Pavel Shelepugin

Test date: Sep-2008  
Hardware Availability: Dec-2007  
Software Availability: Aug-2008



## Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	64	<u>395</u>	<u>3.96</u>	397	3.95	395	3.97							
107.leslie3d	64	<u>1042</u>	<u>5.01</u>	1043	5.01	1042	5.01							
113.GemsFDTD	64	<u>787</u>	<u>8.02</u>	788	8.00	783	8.05							
115.fds4	64	<u>422</u>	<u>4.62</u>	424	4.60	419	4.66							
121.pop2	64	<u>656</u>	<u>6.29</u>	656	6.29	662	6.23							
122.tachyon	64	372	7.53	369	7.57	<u>370</u>	<u>7.56</u>							
126.lammps	64	<u>494</u>	<u>5.90</u>	494	5.90	495	5.89							
127.wrf2	64	<u>817</u>	<u>9.55</u>	821	9.49	814	9.57							
128.GAPgeofem	64	<u>375</u>	<u>5.51</u>	374	5.53	376	5.50							
129.tera_tf	64	<u>373</u>	<u>7.42</u>	373	7.42	374	7.41							

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	64	789	4.83	780	4.89	<b>783</b>	<b>4.87</b>									
132.zeusmp2	64	512	6.06	<u>512</u>	<u>6.06</u>	517	6.00									
137.lu	64	<b>392</b>	<b>9.39</b>	391	9.40	396	9.27									

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: Endeavor Node  
 Interconnects: IB Switch  
 Gigabit Ethernet  
 File Server Node: Panasas Fileserver  
 Total Compute Nodes: 8  
 Total Chips: 16  
 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 (10.1.018)  
 C++ Compiler: Intel C++ Compiler 10.1 for Linux (10.1.018)  
 Fortran Compiler: Intel Fortran Compiler 10.1 for Linux (10.1.018)  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 MPI Library: Intel MPI Library 3.1 for Linux (3.1.038)  
 Other MPI Info: None  
 Pre-processors: No  
 Other Software: Intel MPI Library 3.1 for Linux Multi-Purpose Daemon (MPD)

### Node Description: Endeavor Node

#### Hardware

Number of nodes: 8  
 Uses of the node: compute  
 Vendor: Intel  
 Model: SR1560SF  
 CPU Name: Intel Xeon CPU E5462  
 CPU(s) orderable: 1-2 chips  
 Chips enabled: 2  
 Cores enabled: 8  
 Cores per chip: 4  
 Threads per core: 1  
 CPU Characteristics: 1600 MHz FSB  
 CPU MHz: 2800  
 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: 16 GB (FBDIMM 16x1-GB 667 MHz)  
 Disk Subsystem: Seagate Barracuda ES 250 GB ST3250620NS  
 Other Hardware: None  
 Adapter: Intel (ESB2) 82563EB Dual-Port Gigabit Ethernet Controller  
 Number of Adapters: 1  
 Slot Type: PCI-Express x8

#### Software

Adapter: Intel (ESB2) 82563EB Dual-Port Gigabit Ethernet Controller  
 Adapter Driver: e1000  
 Adapter Firmware: None  
 Adapter: Mellanox MHGH28-XTC  
 Adapter Driver: OFED 1.3.1  
 Adapter Firmware: 2.5.0  
 Operating System: RedHat EL 4 Update 4  
 Local File System: Linux/ext3  
 Shared File System: DirectFlow  
 System State: Multi-User  
 Other Software: PBS Pro 8.0

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## Node Description: Endeavor Node

Data Rate:	1Gbps Ethernet
Ports Used:	1
Interconnect Type:	Ethernet
Adapter:	Mellanox MHGH28-XTC
Number of Adapters:	1
Slot Type:	PCIe x16 Gen2
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

## Node Description: Panasas Fileserver

Hardware	Software
Number of nodes:	1
Uses of the node:	fileserver
Vendor:	Panasas
Model:	ActiveStor 3050
CPU Name:	--
CPU(s) orderable:	1-2 chips
Chips enabled:	1
Cores enabled:	1
Cores per chip:	1
Threads per core:	1
CPU Characteristics:	--
CPU MHz:	0
Primary Cache:	None
Secondary Cache:	None
L3 Cache:	None
Other Cache:	None
Memory:	1 MB
Disk Subsystem:	140 disks, 250GB/disk, 35TB total, 7 Shelves
Other Hardware:	None
Adapter:	--
Number of Adapters:	1
Slot Type:	--
Data Rate:	1Gbps Ethernet
Ports Used:	4
Interconnect Type:	Ethernet
Adapter:	--
Adapter Driver:	--
Adapter Firmware:	N/A
Operating System:	2.3.7.a-195733.1
Local File System:	PanFS
Shared File System:	DirectFlow
System State:	Multi-User
Other Software:	None

## Interconnect Description: IB Switch

Hardware	Software
Vendor:	Cisco
Model:	Cisco SFS 7024D
Switch Model:	Cisco SFS 7024D

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## Interconnect Description: IB Switch

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

## Interconnect Description: Gigabit Ethernet

	Hardware
Vendor:	Cisco
Model:	Cisco Catalyst 4510
Switch Model:	Cisco Catalyst 4510
Number of Switches:	1
Number of Ports:	332
Data Rate:	1Gbps Ethernet
Firmware:	--
Topology:	Star
Primary Use:	Cluster File System

### Software

## General Notes

Required alternate sources:  
 129.tera\_tf: fixbuffer  
 Optional alternate sources:  
 104.milc: calloc  
 113.GemsFDTD: maxprocandstop

## Base Compiler Invocation

C benchmarks:  
mpiicc

C++ benchmarks:

126.lammps: mpiicpc

Fortran benchmarks:  
mpiifort

Benchmarks using both Fortran and C:  
mpiicc mpiifort



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## Base Portability Flags

121.pop2: -DSPEC\_MPI\_CASE\_FLAG  
126.lammps: -DMPICH\_IGNORE\_CXX\_SEEK  
127.wrf2: -DSPEC\_MPI\_CASE\_FLAG -DSPEC\_MPI\_LINUX  
130.socorro: -DSPEC\_EIGHT\_BYTE\_LONG

## 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.20080618.html](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.html)

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

[http://www.spec.org/mpi2007/flags/EM64T\\_Intel101\\_flags.20080618.xml](http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.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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