SPEC® MPIM2007 Result

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Intel Corporation

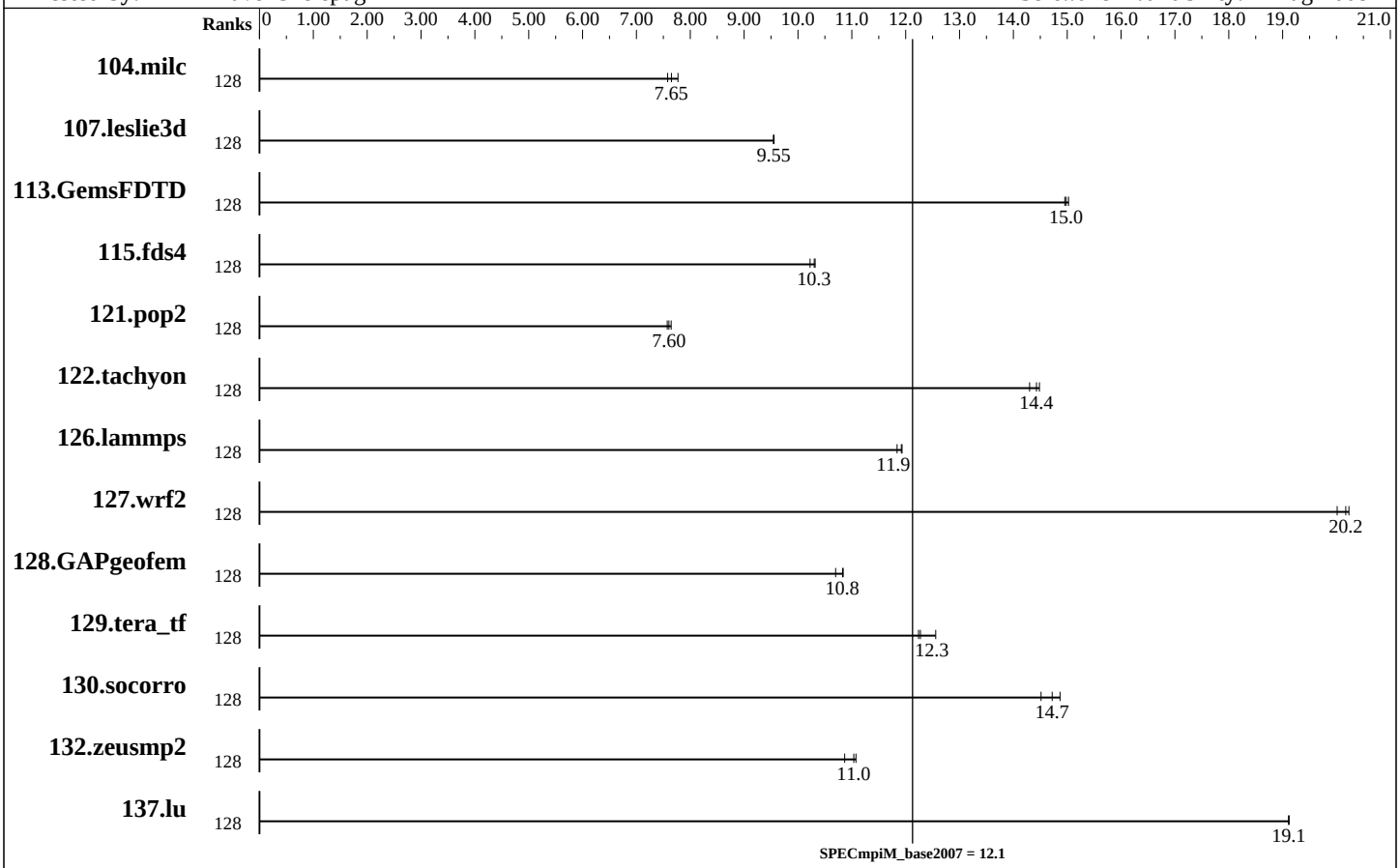
Endeavor (Intel Xeon E5462, 2.80 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 12.1

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	128	206	7.58	201	7.77	**205**	**7.65**							
107.leslie3d	128	546	9.56	**547**	**9.55**	547	9.54							
113.GemsFDTD	128	420	15.0	**421**	**15.0**	422	15.0							
115.fds4	128	**189**	**10.3**	189	10.3	191	10.2							
121.pop2	128	540	7.64	**543**	**7.60**	545	7.57							
122.tachyon	128	196	14.3	**194**	**14.4**	193	14.5							
126.lammps	128	246	11.8	**245**	**11.9**	244	11.9							
127.wrf2	128	**386**	**20.2**	385	20.2	390	20.0							
128.GAPgeofem	128	193	10.7	191	10.8	**191**	**10.8**							
129.tera_tf	128	**226**	**12.3**	226	12.2	220	12.6							

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	128	257	14.9	263	14.5	**259**	**14.7**							
132.zeusmp2	128	280	11.1	286	10.9	**281**	**11.0**							
137.lu	128	**192**	**19.1**	192	19.1	192	19.1							

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:	16
Total Chips:	32
Total Cores:	128
Total Threads:	128
Total Memory:	256 GB
Base Ranks Run:	128
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:	16
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

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

Software

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

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

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Software

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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`

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`

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

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