SPEC® MPIM2007 Result

Intel Corporation

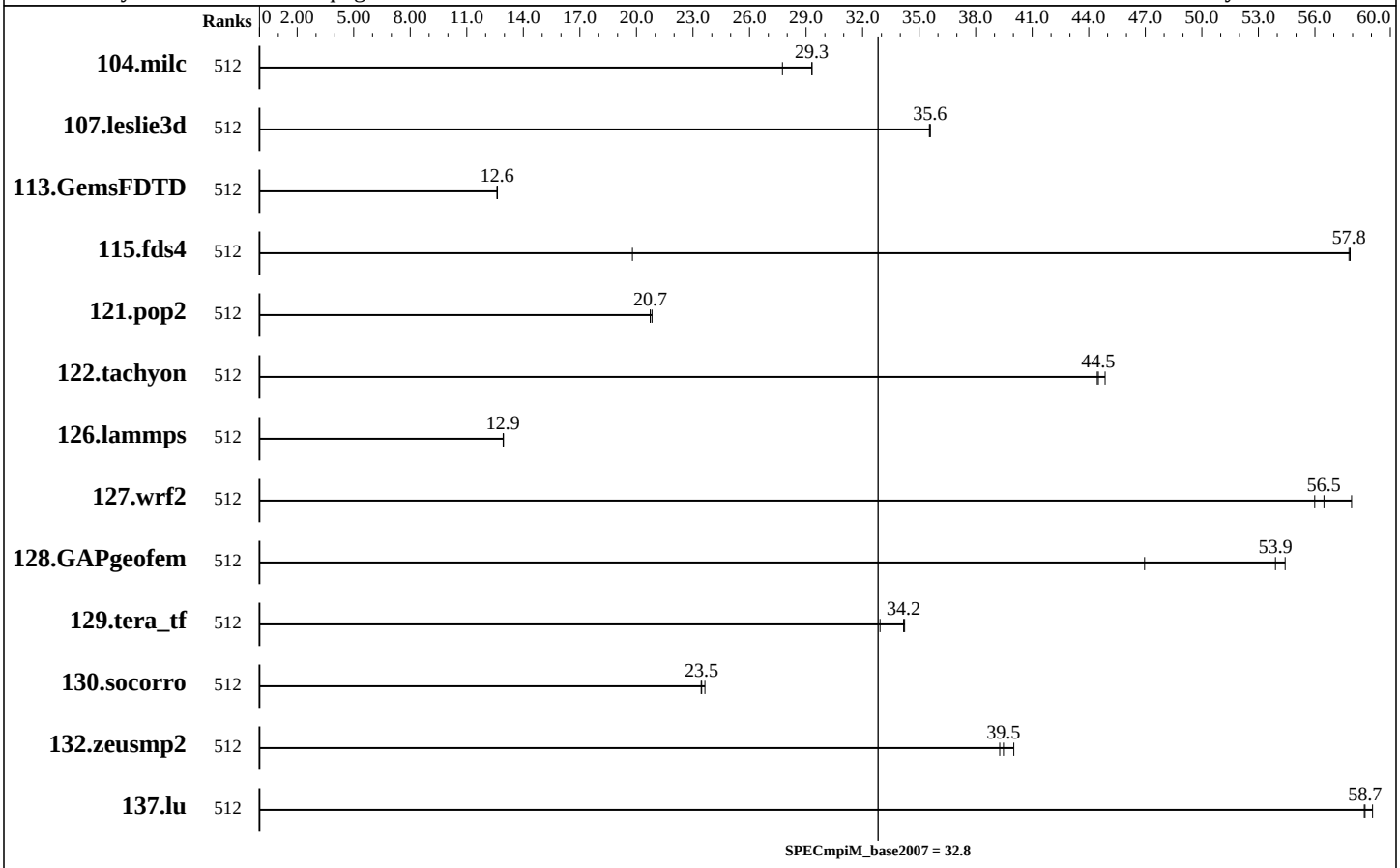
Endeavor (Intel Xeon E5462, 2.80 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 32.8

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

Test date: Dec-2008
Hardware Availability: Dec-2007
Software Availability: Nov-2008



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	512	56.4	27.7	**53.4**	**29.3**	53.4	29.3							
107.leslie3d	512	147	35.6	147	35.5	**147**	**35.6**							
113.GemsFDTD	512	500	12.6	500	12.6	**500**	**12.6**							
115.fds4	512	98.6	19.8	33.7	57.9	**33.7**	**57.8**							
121.pop2	512	199	20.7	**199**	**20.7**	198	20.8							
122.tachyon	512	62.3	44.9	**62.8**	**44.5**	62.9	44.5							
126.lammps	512	225	12.9	225	12.9	**225**	**12.9**							
127.wrf2	512	139	56.0	135	57.9	**138**	**56.5**							
128.GAPgeofem	512	44.0	47.0	37.9	54.4	**38.3**	**53.9**							
129.tera_tf	512	80.9	34.2	**81.0**	**34.2**	84.1	32.9							

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	161	23.6	**163**	**23.5**	163	23.4							
132.zeusmp2	512	77.5	40.0	79.0	39.3	**78.6**	**39.5**							
137.lu	512	**62.7**	**58.7**	62.7	58.6	62.2	59.1							

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:	HOME
Total Compute Nodes:	64
Total Chips:	128
Total Cores:	512
Total Threads:	512
Total Memory:	1 TB
Base Ranks Run:	512
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 3.2 for Linux (3.2.011)
Other MPI Info:	None
Pre-processors:	No
Other Software:	Intel MPI Library 3.2 for Linux Multi-Purpose Daemon (MPD)

Node Description: Endeavor Node

Hardware

Number of nodes:	64
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

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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:	Red Hat EL 4 Update 4, kernel 2.6.9-67
Local File System:	Linux/ext2
Shared File System:	DirectFlow
System State:	Multi-User
Other Software:	PBS Pro 8.0

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Software Availability: Nov-2008

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: HOME

Hardware

Number of nodes:	1
Uses of the node:	fileserver
Vendor:	Intel
Model:	SSR212CC
CPU Name:	Intel Xeon CPU
CPU(s) orderable:	2 chips
Chips enabled:	2
Cores enabled:	2
Cores per chip:	1
Threads per core:	1
CPU Characteristics:	--
CPU MHz:	2800
Primary Cache:	12 KB I + 16 KB D on chip per chip
Secondary Cache:	1 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	6 GB
Disk Subsystem:	10 disks, 300GB/disk, 3TB total
Other Hardware:	None
Adapter:	Intel 82546GB Dual-Port Gigabit Ethernet Controller
Number of Adapters:	1
Slot Type:	PCI-Express x8
Data Rate:	1Gbps Ethernet
Ports Used:	1
Interconnect Type:	Ethernet

Software

Adapter:	Intel 82546GB Dual-Port Gigabit Ethernet Controller
Adapter Driver:	e1000
Adapter Firmware:	N/A
Operating System:	RedHat EL 4 Update 4
Local File System:	None
Shared File System:	NFS
System State:	Multi-User
Other Software:	None

Interconnect Description: IB Switch

Hardware

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

Software

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Software Availability: Nov-2008

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

Submit Notes

```
The config file option 'submit' was used.
```

General Notes

```
Environment:
  -genv DAPL_CM_ROUTE_TIMEOUT_MS 20000
    Determines the uDAPL path resolution timeouts,
    measured in milliseconds. Default: 4000ms
```

Base Compiler Invocation

C benchmarks:
`mpiicc`

C++ benchmarks:

126.lammps: `mpiicpc`

Fortran benchmarks:
`mpiifort`

Continued on next page

Base Compiler Invocation (Continued)

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`

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`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC MPI2007 v1.1.
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