SPEC® MPIM2007 Result

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IBM

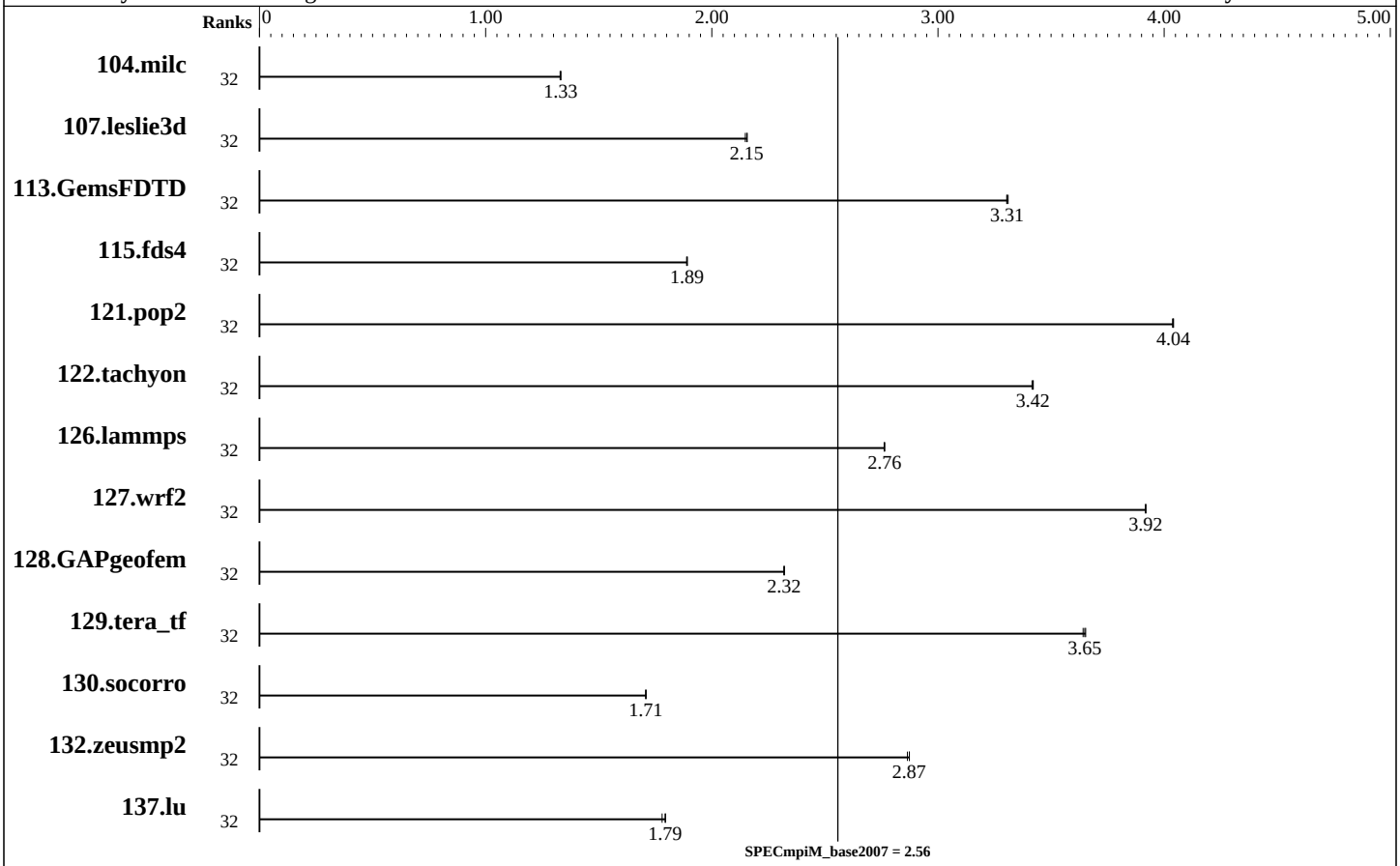
iDP (Intel Xeon L5420, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 2.56

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	32	1177	1.33	**1175**	**1.33**	1175	1.33							
107.leslie3d	32	2430	2.15	2420	2.16	**2423**	**2.15**							
113.GemsFDTD	32	1906	3.31	**1908**	**3.31**	1909	3.30							
115.fds4	32	1031	1.89	**1032**	**1.89**	1033	1.89							
121.pop2	32	**1022**	**4.04**	1021	4.04	1023	4.04							
122.tachyon	32	819	3.42	818	3.42	**818**	**3.42**							
126.lammps	32	1054	2.76	**1055**	**2.76**	1055	2.76							
127.wrf2	32	1989	3.92	1990	3.92	**1990**	**3.92**							
128.GAPgeofem	32	**890**	**2.32**	890	2.32	891	2.32							
129.tera_tf	32	**759**	**3.65**	758	3.65	760	3.64							

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	32	2235	1.71	**2235**	**1.71**	2233	1.71							
132.zeusmp2	32	**1080**	**2.87**	1083	2.86	1080	2.87							
137.lu	32	2047	1.80	2065	1.78	**2050**	**1.79**							

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:	4
Total Chips:	8
Total Cores:	32
Total Threads:	32
Total Memory:	128 GB
Base Ranks Run:	32
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:	4
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

Continued on next page

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	
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

Software

Interconnect Description: IB Switch

Hardware	
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

Software

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`

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

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