SPEC® MPIM2007 Result

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IBM

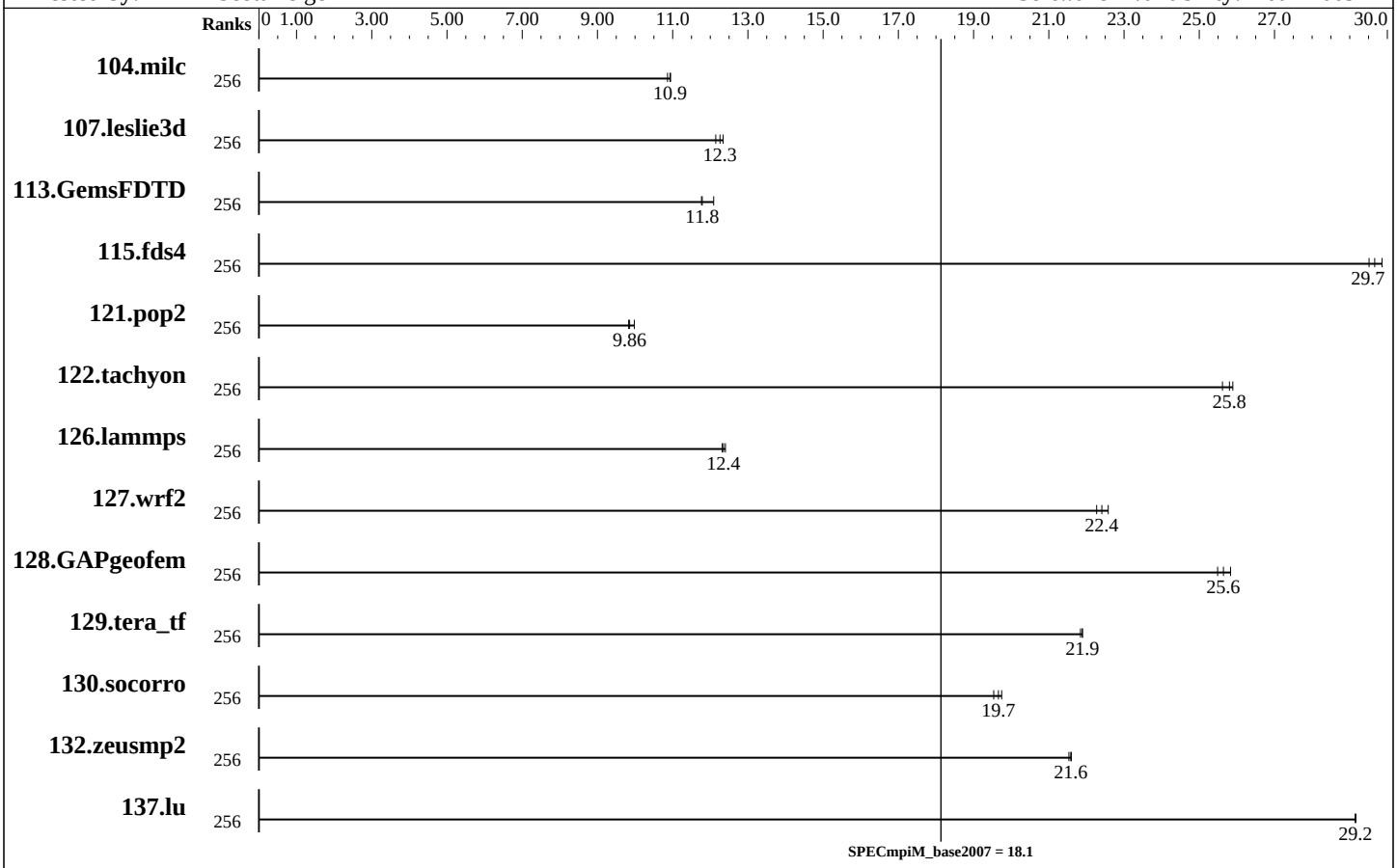
iDP (Intel Xeon L5420, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 18.1

MPI2007 license: 3440
Test sponsor: Indiana University
Tested by: Scott Teige

Test date: Dec-2009
Hardware Availability: Dec-2007
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	256	144	10.9	**143**	**10.9**	143	10.9							
107.leslie3d	256	**426**	**12.3**	423	12.3	430	12.1							
113.GemsFDTD	256	536	11.8	522	12.1	**535**	**11.8**							
115.fds4	256	65.3	29.9	66.1	29.5	**65.8**	**29.7**							
121.pop2	256	414	9.98	420	9.83	**419**	**9.86**							
122.tachyon	256	108	25.9	109	25.6	**108**	**25.8**							
126.lammps	256	235	12.4	237	12.3	**236**	**12.4**							
127.wrf2	256	350	22.3	**348**	**22.4**	345	22.6							
128.GAPgeofem	256	79.9	25.8	**80.5**	**25.6**	81.0	25.5							
129.tera_tf	256	**126**	**21.9**	127	21.8	126	21.9							

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	256	193	19.7	**194**	**19.7**	195	19.5							
132.zeusmp2	256	**144**	**21.6**	144	21.5	144	21.6							
137.lu	256	126	29.2	126	29.1	**126**	**29.2**							

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:	32
Total Chips:	64
Total Cores:	256
Total Threads:	256
Total Memory:	1 TB
Base Ranks Run:	256
Minimum Peak Ranks:	--
Maximum Peak Ranks:	--

Software Summary

C Compiler:	Intel C++ Compiler 11.1 for Linux (11.1.038)
C++ Compiler:	Intel C++ Compiler 11.1 for Linux (11.1.038)
Fortran Compiler:	Intel Fortran Compiler 11.1 for Linux (11.1.038)
Base Pointers:	64-bit
Peak Pointers:	64-bit
MPI Library:	OpenMPI 1.3.1
Other MPI Info:	None
Pre-processors:	No
Other Software:	OpenMPI 1.3.1

Node Description: iDP node

Hardware

Number of nodes:	32
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:	e1000e version 1.0.2-k2
Adapter Firmware:	2.4-0
Adapter:	Mellanox Technologies MT26418 [ConnectX IB DDR, PCIe 2.0 5GT/s] (rev a0)
Adapter Driver:	OFED 1.4.1
Adapter Firmware:	2.5.0
Operating System:	RedHat ELv5.4 (x86_64) 2.6.18-92.1.17.el5_lustre.1.6.7.1custom-perfctr-2
Local File System:	Linux/ext3
Shared File System:	IBM N5500 NAS via NFSv3
System State:	Multi-User
Other Software:	--

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Software Availability: Jan-2009

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:	Cluster File System

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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Test sponsor:	Indiana University	**Hardware Availability:**	Dec-2007
Tested by:	Scott Teige	**Software Availability:**	Jan-2009

Base Compiler Invocation

C benchmarks:
`mpicc`

C++ benchmarks:

126.lammps: `mpicxx`

Fortran benchmarks:
`mpif90`

Benchmarks using both Fortran and C:
`mpicc mpif90`

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.20100128.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20100128.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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