SPEC® MPIM2007 Result

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IBM

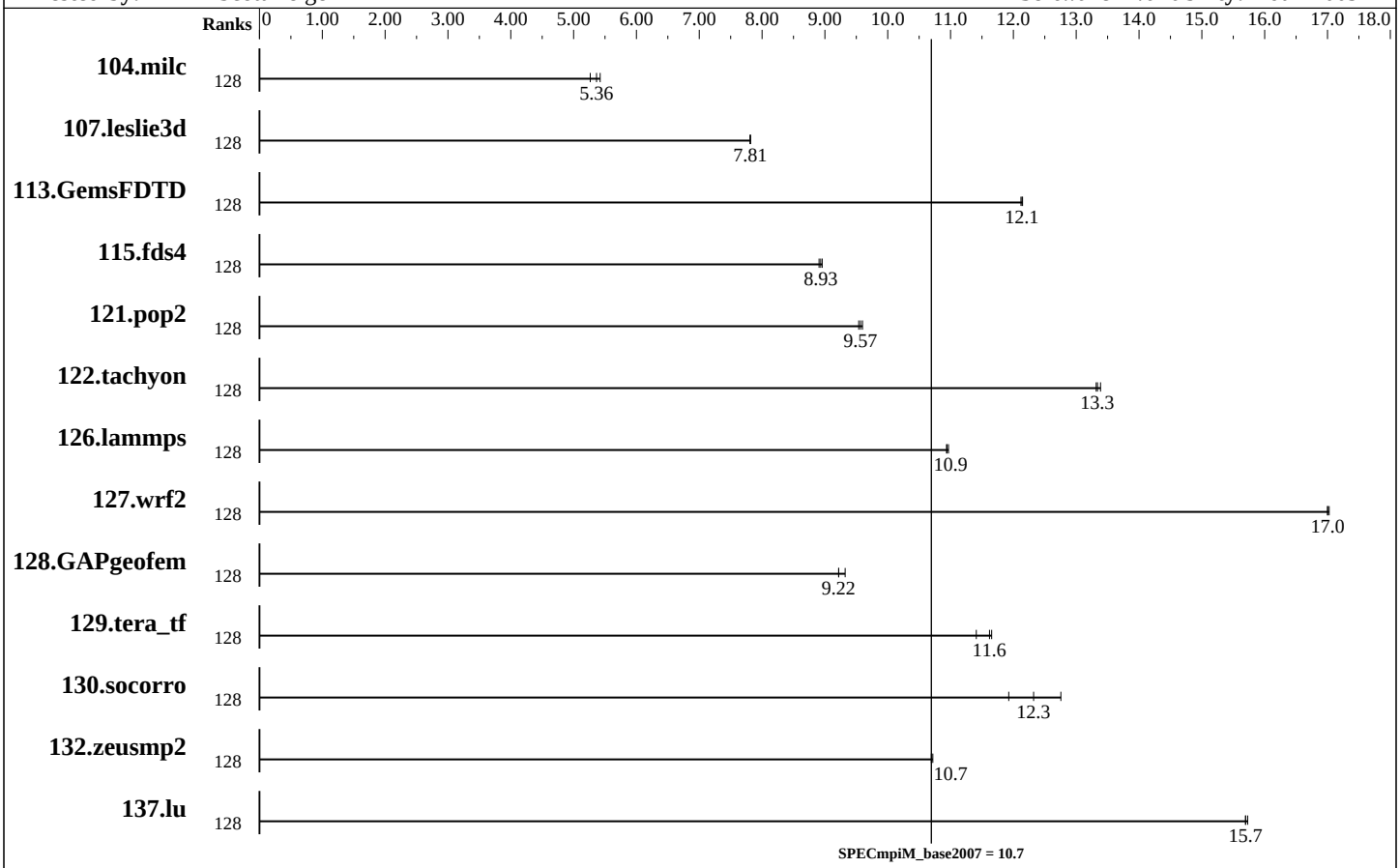
iDP (Intel Xeon L5420, 2.50 GHz)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 10.7

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	128	297	5.27	**292**	**5.36**	289	5.42							
107.leslie3d	128	**668**	**7.81**	668	7.81	668	7.82							
113.GemsFDTD	128	519	12.1	520	12.1	**520**	**12.1**							
115.fds4	128	218	8.96	**218**	**8.93**	219	8.91							
121.pop2	128	430	9.60	433	9.54	**431**	**9.57**							
122.tachyon	128	209	13.4	210	13.3	**210**	**13.3**							
126.lammps	128	266	11.0	**266**	**10.9**	267	10.9							
127.wrf2	128	458	17.0	459	17.0	**459**	**17.0**							
128.GAPgeofem	128	**224**	**9.22**	224	9.22	222	9.32							
129.tera_tf	128	238	11.7	**238**	**11.6**	243	11.4							

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	299	12.8	320	11.9	**310**	**12.3**							
132.zeusmp2	128	290	10.7	290	10.7	**290**	**10.7**							
137.lu	128	234	15.7	234	15.7	**234**	**15.7**							

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:	16
Total Chips:	32
Total Cores:	128
Total Threads:	128
Total Memory:	512 GB
Base Ranks Run:	128
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:	16
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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