



SPEC[®] MPIM2007 Result

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IBM Corporation

System x3550 M2 (Intel Xeon X5570, 2.93 GHz
SMT on, Turbo on)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = 7.26

MPI2007 license: 005

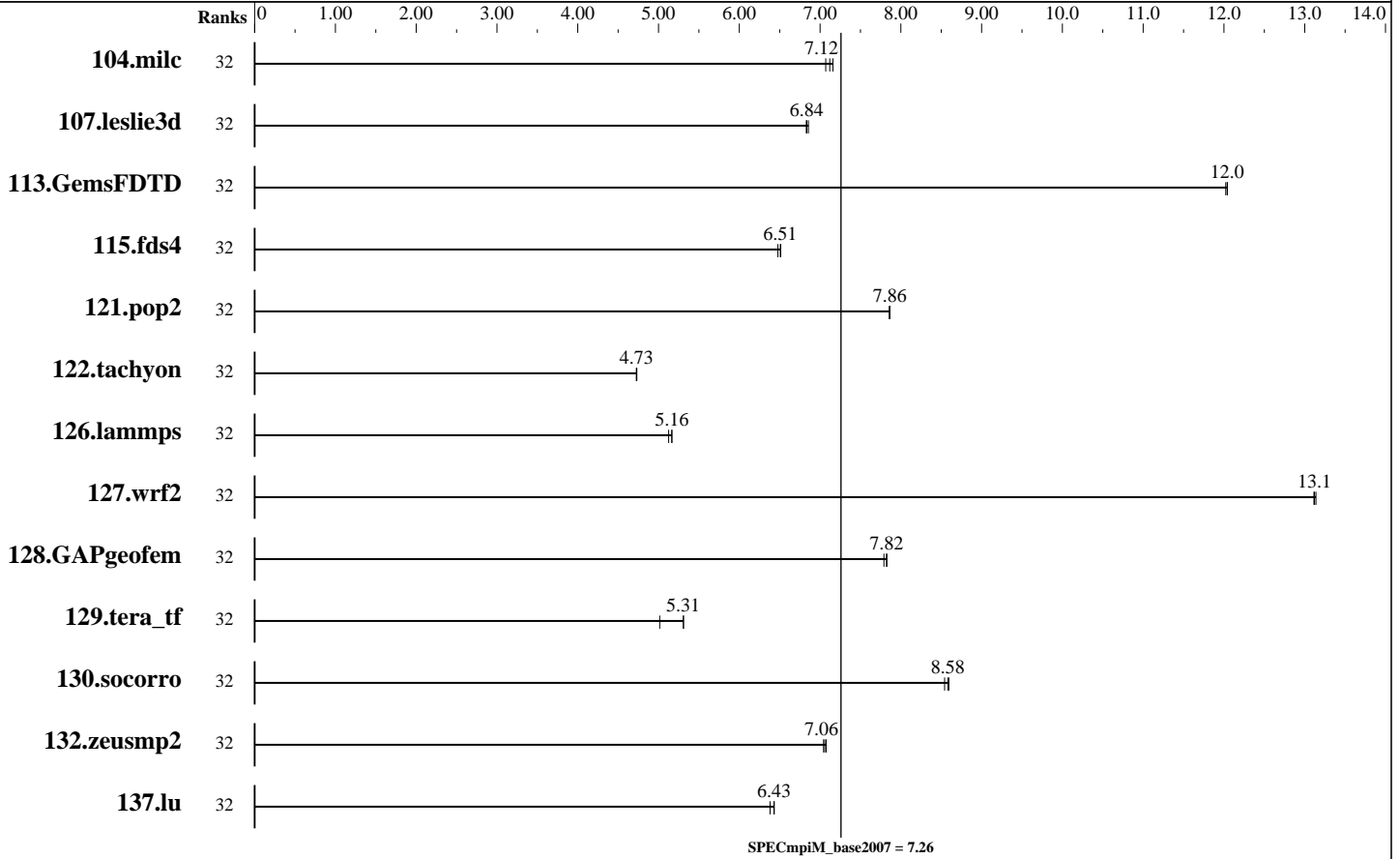
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jun-2009

Hardware Availability: Apr-2009

Software Availability: Apr-2009



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	32	<u>220</u>	<u>7.12</u>	221	7.07	219	7.16							
107.leslie3d	32	764	6.83	761	6.86	<u>764</u>	<u>6.84</u>							
113.GemsFDTD	32	524	12.0	<u>524</u>	<u>12.0</u>	525	12.0							
115.fds4	32	<u>300</u>	<u>6.51</u>	301	6.48	300	6.51							
121.pop2	32	525	7.86	<u>525</u>	<u>7.86</u>	525	7.86							
122.tachyon	32	<u>591</u>	<u>4.73</u>	592	4.73	591	4.73							
126.lammmps	32	564	5.17	569	5.13	<u>564</u>	<u>5.16</u>							
127.wrf2	32	<u>594</u>	<u>13.1</u>	594	13.1	593	13.1							
128.GAPgeofem	32	<u>264</u>	<u>7.82</u>	264	7.83	265	7.79							
129.tera_tf	32	521	5.31	<u>522</u>	<u>5.31</u>	552	5.01							

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	444	8.59	<u>445</u>	<u>8.58</u>	447	8.54									
132.zeusmp2	32	441	7.04	439	7.08	<u>440</u>	<u>7.06</u>									
137.lu	32	576	6.38	<u>572</u>	<u>6.43</u>	571	6.43									

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: IBM System x3550 M2
 Interconnects: InfiniBand
 Ethernet
 File Server Node: IBM System x346 8840
 Head Node: IBM System x3550 M2
 Total Compute Nodes: 4
 Total Chips: 8
 Total Cores: 32
 Total Threads: 64
 Total Memory: 96 GB
 Base Ranks Run: 32
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C++ Compiler 11.0.083 for Linux
 C++ Compiler: Intel C++ Compiler 11.0.083 for Linux
 Fortran Compiler: Intel Fortran Compiler 11.0.083 for Linux
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: Intel MPI Library 3.2.1.009 for Linux
 Other MPI Info: None
 Pre-processors: No
 Other Software: Intel MPI Library 3.2.1.009 for Linux
 Multi-Purpose Daemon (MPD)

Node Description: IBM System x3550 M2

Hardware

Number of nodes: 4
 Uses of the node: compute, head
 Vendor: IBM Corporation
 Model: 7946-92U
 CPU Name: Intel Xeon X5570
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 8
 Cores per chip: 4
 Threads per core: 2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz, 6.4 GT/s
 QPI, Hyper-Threading enabled
 CPU MHz: 2933
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 8 MB I+D on chip per chip, 8 MB shared / 4 cores
 Other Cache: None
 Memory: 24 GB (RDIMM 6x4-GB DDR3-1333 MHz)
 Disk Subsystem: 73.4GB 10K-rpm SAS SFF Slim-HS 2.5" HDD
 Other Hardware: None
 Adapter: Integrated Broadcom Corporation NetXtreme II BCM5709 Gigabit Ethernet (rev 20)

Software

Adapter: Integrated Broadcom Corporation NetXtreme II BCM5709 Gigabit Ethernet (rev 20)
 Adapter Driver: bnx2 1.7.9-1
 Adapter Firmware: 4.6.4 NCSI 1.0.6
 Adapter: Mellanox ConnectX
 Adapter Driver: OFED 1.4-20090301-0600
 Adapter Firmware: 2.6.000
 Operating System: Red Hat EL 5.3, kernel 2.6.18-128.el5
 Local File System: Linux/ext3
 Shared File System: NFS
 System State: Multi-User
 Other Software: None

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Node Description: IBM System x3550 M2

Number of Adapters:	1
Slot Type:	PCIe x16 Gen2
Data Rate:	10/100/1000
Ports Used:	1
Interconnect Type:	Ethernet
Adapter:	Mellanox ConnectX
Number of Adapters:	1
Slot Type:	PCIe x16 Gen2
Data Rate:	InfiniBand 4x DDR
Ports Used:	1
Interconnect Type:	InfiniBand

General Notes

BIOS settings notes:

Intel Hyper-Threading Technology (SMT): Enabled
Intel Turbo Boost Technology (Turbo) : Enabled

RAM configuration notes: Each compute node has
1x4-GB RDIMM on each memory channel.

Node Description: IBM System x346 8840

Hardware	
Number of nodes:	1
Uses of the node:	fileserver
Vendor:	IBM Corporation
Model:	884045Y
CPU Name:	Intel Xeon EM64T
CPU(s) orderable:	2 chips
Chips enabled:	2
Cores enabled:	2
Cores per chip:	1
Threads per core:	1
CPU Characteristics:	800 MHz FSB
CPU MHz:	3600
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per chip
L3 Cache:	None
Other Cache:	None
Memory:	4 GB
Disk Subsystem:	SCSI
Other Hardware:	None
Adapter:	Integrated Broadcom Corporation NetXtreme BCM5721 Gigabit Ethernet PCI Express (rev 11)
Number of Adapters:	1
Slot Type:	PCI-X
Data Rate:	10/100/1000

Software	
Adapter:	Integrated Broadcom Corporation NetXtreme BCM5721 Gigabit Ethernet PCI Express (rev 11)
Adapter Driver:	tg3 3.86
Adapter Firmware:	5721-v3.29a, ASFIPMI v6.08
Operating System:	Red Hat EL 5.2, kernel 2.6.18-92.el5
Local File System:	None
Shared File System:	NFS
System State:	Multi-User
Other Software:	None

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Software Availability: Apr-2009

Node Description: IBM System x346 8840

Ports Used: 1
Interconnect Type: Ethernet

Interconnect Description: InfiniBand

Hardware	
Vendor:	Voltaire
Model:	24 4X DDR port Bundle
Switch Model:	ISR 9024D-M
Number of Switches:	1
Number of Ports:	24
Data Rate:	4X DDR
Firmware:	1.0.0
Topology:	Single Switch
Primary Use:	MPI traffic

Software

Interconnect Description: Ethernet

Hardware	
Vendor:	Cisco
Model:	3750G
Switch Model:	WS-C3750G-24TS-E1U
Number of Switches:	1
Number of Ports:	28
Data Rate:	Full duplex 1000
Firmware:	12.2 (35SE5)
Topology:	Single Switch
Primary Use:	File system traffic

Software

Submit Notes

The config file option 'submit' was used.
submit = mpiexec -genv -np \$ranks \$command

Base Compiler Invocation

C benchmarks:
mpiicc

C++ benchmarks:

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Base Compiler Invocation (Continued)

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.wf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX

Base Optimization Flags

C benchmarks:

-O3 -xSSE4.2 -no-prec-div

C++ benchmarks:

126.lammps: -O3 -xSSE4.2 -no-prec-div

Fortran benchmarks:

-O3 -xSSE4.2 -no-prec-div

Benchmarks using both Fortran and C:

-O3 -xSSE4.2 -no-prec-div

The flags file that was used to format this result can be browsed at

http://www.spec.org/mpi2007/results/flags/EM64T_Intel111_flags.20100413.00.html

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

http://www.spec.org/mpi2007/results/flags/EM64T_Intel111_flags.20100413.00.xml

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