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 = 25.0

MPI2007 license: 005		**Test date:**	Jun-2009
Test sponsor:	IBM Corporation	**Hardware Availability:**	Apr-2009
Tested by:	IBM Corporation	**Software Availability:**	Apr-2009

Ranks										
104.milc	128					27.0				
107.leslie3d	128				22.9					
113.GemsFDTD	128						33.5			
115.fds4	128				23.6					
121.pop2	128		17.8							
122.tachyon	128		18.3							
126.lammps	128			20.3						
127.wrf2	128									43.6
128.GAPgeofem	128					26.0				
129.tera_tf	128		16.6							
130.socorro	128					26.8				
132.zeusmp2	128					26.3				
137.lu	128						34.2			

SPECmpiM_base2007 = 25.0

Results Table

	Base						Peak					
Benchmark	**Ranks**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Ranks**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
104.milc	128	61.7	25.3	58.0	27.0	**58.0**	**27.0**					
107.leslie3d	128	**228**	**22.9**	227	23.0	230	22.7					
113.GemsFDTD	128	188	33.6	**188**	**33.5**	188	33.5					
115.fds4	128	82.9	23.5	82.8	23.6	**82.8**	**23.6**					
121.pop2	128	232	17.8	232	17.8	**232**	**17.8**					
122.tachyon	128	153	18.3	157	17.8	**153**	**18.3**					
126.lammps	128	143	20.3	145	20.2	**143**	**20.3**					
127.wrf2	128	**179**	**43.6**	179	43.6	179	43.6					
128.GAPgeofem	128	**79.6**	**26.0**	79.6	26.0	79.7	25.9					
129.tera_tf	128	166	16.6	**167**	**16.6**	167	16.6					

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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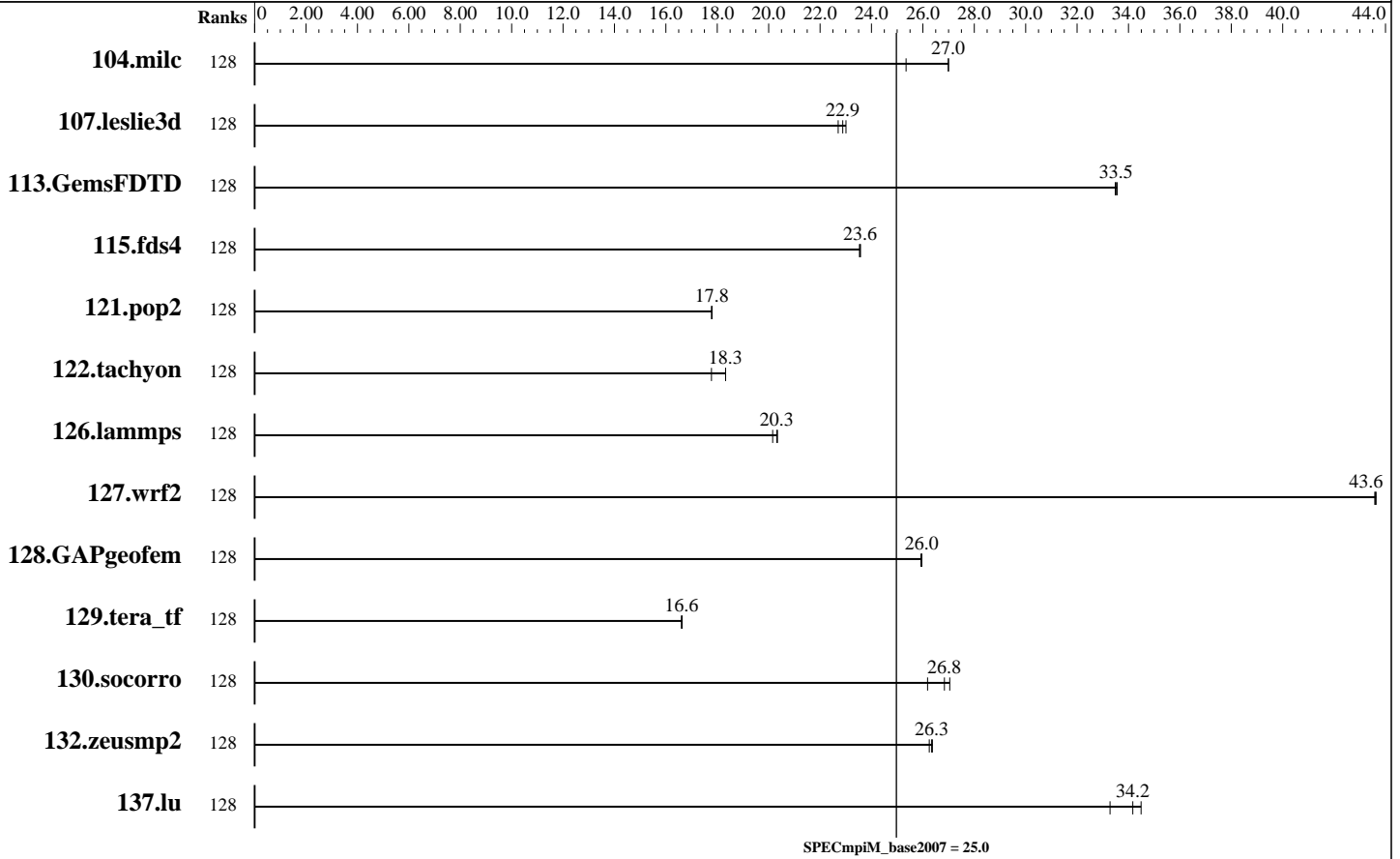**Test sponsor:** IBM Corporation
Tested by: IBM Corporation

Test date: Jun-2009
Hardware Availability: Apr-2009
Software Availability: Apr-2009

Results Table (Continued)

Benchmark	Ranks	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
130.socorro	128	**142**	**26.8**	141	27.0	146	26.2							
132.zeusmp2	128	118	26.2	118	26.4	**118**	**26.3**							
137.lu	128	110	33.3	107	34.5	**108**	**34.2**							

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:	IBM System x3550 M2
Interconnects:	InfiniBand
	Ethernet
File Server Node:	IBM System x346 8840
Head Node:	IBM System x3550 M2
Total Compute Nodes:	16
Total Chips:	32
Total Cores:	128
Total Threads:	256
Total Memory:	384 GB
Base Ranks Run:	128
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:	16
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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MPI2007 license:	005	**Test date:**	Jun-2009
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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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Tested by:	IBM Corporation	**Software Availability:**	Apr-2009

Node Description: IBM System x346 8840

Ports Used: 1
Interconnect Type: Ethernet

Interconnect Description: InfiniBand

Hardware	**Software**
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	

Interconnect Description: Ethernet

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

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.wrf2: `-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/flags/EM64T_Intel111_flags.20090729.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/mpi2007/flags/EM64T_Intel111_flags.20090729.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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