



SPEC® MPIM2007 Result

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Celestica

SPECmpiM_peak2007 = **NC**

A2210 ("Serenade") -- Reference Platform

SPECmpiM_base2007 = **NC**

MPI2007 license: 0017

Test date: May-2007

Test sponsor: Advanced Micro Devices

Hardware Availability: Jan-2004

Tested by: Chris Parrott

Software Availability: May-2007

Ranks
104.milc
107.leslie3d
113.GemsFDTD
115.fds4
121.pop2
122.tachyon
126.lammps
127.wrf2
128.GAPgeofem
129.tera_tf
130.socorro
132.zeusmp2
137.lu

Results Table

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
104.milc	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
107.leslie3d	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
113.GemsFDTD	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
115.fds4	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
121.pop2	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
122.tachyon	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
126.lammps	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
127.wrf2	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		
128.GAPgeofem	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC		

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
129.tera_tf	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
130.socorro	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
132.zeusmp2	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC
137.lu	16	NC	NC	NC	NC	NC	NC	16	NC	NC	NC	NC	NC	NC

Results appear in the order in which they were run. Bold underlined text indicates median measurement.

Hardware Summary

Type of System: Homogenous
 Compute Node: Baseline Cluster Node
 Interconnect: Baseline Cluster Interconnect
 File Server Node: Baseline Cluster Node
 Head Node: Baseline Cluster Node
 Total Compute Nodes: 8
 Total Chips: 16
 Total Cores: 16
 Total Threads: 16
 Total Memory: 64 GB
 Base Ranks Run: 16
 Minimum Peak Ranks: 16
 Maximum Peak Ranks: 16

Software Summary

Compiler: Pathscale 2.5
 C++ Compiler: Pathscale 2.5
 Fortran Compiler: Pathscale 2.5
 Integer Pointers: 64-bit
 Pointer Pointers: Not Applicable
 MPI Library: MPICH2 1.0.3
 Other MPI Info: None
 Pre-processors: No
 Other Software: ACML 3.6.0 (BLAS/LAPACK routines)

Node Description: Baseline Cluster Node

Hardware

Number of nodes: 8
 Uses of the node: compute head, file server
 Vendor: Celestica
 Model: A2210 ("Serenade")
 CPU Name: AMD Opteron 848
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 2
 Cores per chip: 1
 Threads per core: 1
 CPU characteristics: 2.2 GHz
 CPU MHz: 2200
 Primary Cache: 64 KB I + 64 KB D on chip per chip
 Secondary Cache: 1 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 8 GB
 Disk Subsystem: 36 GB SCSI disk [Seagate ST336607LC - 10000 RPM]
 Other Hardware: --
 Adapter: Broadcom BCM95704

Software

Adapter: Broadcom BCM95704
 Adapter Driver: --
 Adapter Firmware: --
 Operating System: SLES 9 SP3
 Local File System: ReiserFS
 Shared File System: NFS
 System State: multi-user
 Other Software: --

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Node Description: Baseline Cluster Node

Number of Adapters:	2
Slot Type:	PCI (built into chipset)
Data Rate:	1 Gbps
Ports Used:	1
Interconnect Type:	Gigabit Ethernet

General Notes

Only the first node serves as a head and fileserver node, in addition to being a compute node. All other nodes are compute nodes only.

Interconnect Description: Baseline Cluster Interconnect

	Hardware	Software
Vendor:	Broadcom	
Model:	BCM95704	
Switch Model:	SMC TigerSwitch 1/100/1000 8624T	
Number of Switches:	1	
Number of Ports:	16	
Data Rate:	1 Gbps	
Firmware:	--	
Topology:	star (single switch)	
Primary Use:	MPI and filesystem traffic	

Base Compiler Invocation

C benchmarks:
/opt/mpich2-1.0.3-pathscales-2.4/bin/mpicc

C++ benchmarks:
/opt/mpich2-1.0.3-pathscales-2.4/bin/mpicxx

Fortran benchmarks:
/opt/mpich2-1.0.3-pathscales-2.4/bin/mpif90

Benchmarks using both Fortran and C:
/opt/mpich2-1.0.3-pathscales-2.4/bin/mpicc
/opt/mpich2-1.0.3-pathscales-2.4/bin/mpif90



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Base Portability Flags

115.fds4: -DSPEC_MPI_LC_TRAILING_DOUBLE_UNDERSCORE
 121.pop2: -DSPEC_MPI_DOUBLE_UNDERSCORE
 126.lammps: -DMPICH_IGNORE_CXX_SEEK(*)
 127.wrf2: -DF2CSTYLE -DSPEC_MPI_DOUBLE_UNDERSCORE -DSPEC_MPI_LINUX
 130.socorro: -fno-second-underscore

(*) Indicates a portability flag that was found in a non-portability variable.

Base Optimization Flags

C benchmarks:

-O2 -LANG:copyinout=OFF

C++ benchmarks:

126.lammps: -O2 -LANG:copyinout=OFF

Fortran benchmarks:

-O2 -LANG:copyinout=OFF

Benchmarks using both Fortran and C:

-O2 -LANG:copyinout=OFF

Base Other Flags

C benchmarks:

122.tachyon: -I.

Fortran benchmarks:

-I.

Benchmarks using both Fortran and C:

115.fds4: -I.

Peak Optimization Flags

C benchmarks:

104.milc: basepeak = yes

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Peak Optimization Flags (Continued)

122.tachyon: basepeak = yes

C++ benchmarks:

126.lammps: basepeak = yes

Fortran benchmarks:

107.leslie3d: basepeak = yes

113.GemsFDTD: basepeak = yes

129.tera_tf: basepeak = yes

137.lu: basepeak = yes

Benchmarks using both Fortran and C:

115.fds4: basepeak = yes

121.pop2: basepeak = yes

127.wrf2: basepeak = yes

128.GAPgeofem: basepeak = yes

130.socorro: basepeak = yes

132.zeusmp2: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/mpi2007/results/flags/MPI2007_flags.20100413.09.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/results/flags/MPI2007_flags.20100413.09.xml

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For other inquiries, please contact webmaster@spec.org.

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