SPEC® MPIM2007 Result

Celestica

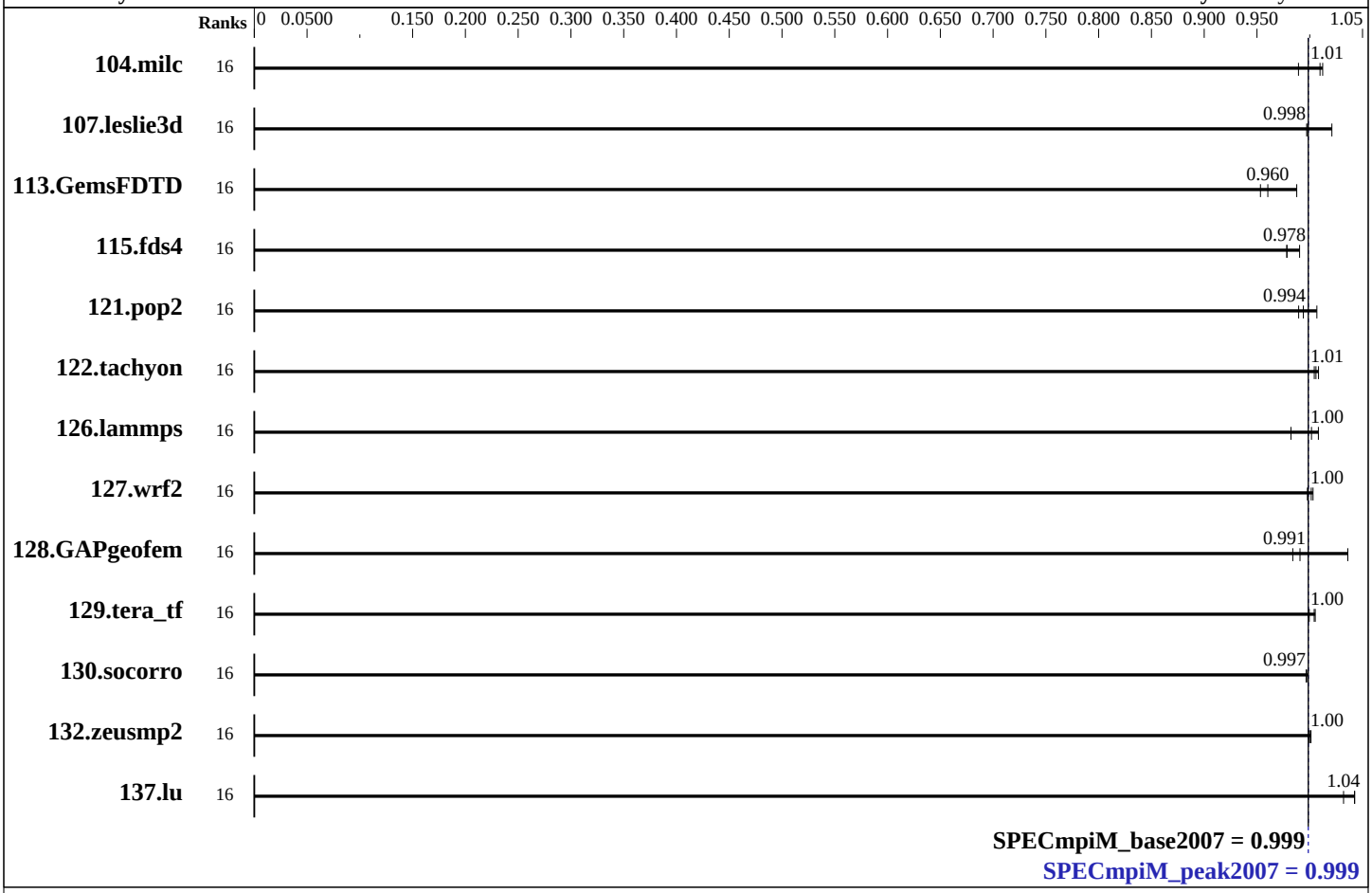
A2210 ("Serenade") -- Reference Platform

SPECmpiM_peak2007 = 0.999

SPECmpiM_base2007 = 0.999

MPI2007 license: 0017
Test sponsor: Advanced Micro Devices
Tested by: Chris Parrott

Test date: May-2007
Hardware Availability: Jan-2004
Software Availability: May-2007



Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	16	1582	0.989	**1550**	**1.01**	1546	1.01	16	1582	0.989	**1550**	**1.01**	1546	1.01
107.leslie3d	16	5113	1.02	5235	0.997	**5231**	**0.998**	16	5113	1.02	5235	0.997	**5231**	**0.998**
113.GemsFDTD	16	6617	0.953	6387	0.988	**6569**	**0.960**	16	6617	0.953	6387	0.988	**6569**	**0.960**
115.fds4	16	1970	0.990	**1994**	**0.978**	1994	0.978	16	1970	0.990	**1994**	**0.978**	1994	0.978
121.pop2	16	4172	0.989	**4153**	**0.994**	4100	1.01	16	4172	0.989	**4153**	**0.994**	4100	1.01
122.tachyon	16	**2781**	**1.01**	2774	1.01	2785	1.00	16	**2781**	**1.01**	2774	1.01	2785	1.00
126.lammps	16	2968	0.982	**2910**	**1.00**	2891	1.01	16	2968	0.982	**2910**	**1.00**	2891	1.01
127.wrf2	16	**7785**	**1.00**	7814	0.998	7772	1.00	16	**7785**	**1.00**	7814	0.998	7772	1.00
128.GAPgeofem	16	2099	0.984	1993	1.04	**2084**	**0.991**	16	2099	0.984	1993	1.04	**2084**	**0.991**
129.tera_tf	16	2754	1.01	2769	1.00	**2756**	**1.00**	16	2754	1.01	2769	1.00	**2756**	**1.00**

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	16	3830	0.997	3825	0.998	**3830**	**0.997**	16	3830	0.997	3825	0.998	**3830**	**0.997**
132.zeusmp2	16	**3101**	**1.00**	3104	1.00	3099	1.00	16	**3101**	**1.00**	3104	1.00	3099	1.00
137.lu	16	3526	1.04	**3526**	**1.04**	3562	1.03	16	3526	1.04	**3526**	**1.04**	3562	1.03

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

C Compiler:	Pathscale 2.5
C++ Compiler:	Pathscale 2.5
Fortran Compiler:	Pathscale 2.5
Base Pointers:	64-bit
Peak 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, fileserver
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:	--
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
Number of Adapters:	2
Slot Type:	PCI (built into chipset)
Data Rate:	1 Gbps

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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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Hardware Availability: Jan-2004
Software Availability: May-2007

Node Description: Baseline Cluster Node

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

Vendor:	Broadcom
Model:	BCM95704
Switch Model:	SMC TigerSwitch 10/100/1000 8624T
Number of Switches:	1
Number of Ports:	16
Data Rate:	1 Gbps
Firmware:	--
Topology:	star (single switch)
Primary Use:	MPI and filesystem traffic

Software

Base Compiler Invocation

C benchmarks:
`/opt/mpich2-1.0.3-pathscale-2.4/bin/mpicc`

C++ benchmarks:

126.lammps: `/opt/mpich2-1.0.3-pathscale-2.4/bin/mpicxx`

Fortran benchmarks:
`/opt/mpich2-1.0.3-pathscale-2.4/bin/mpif90`

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

Base Portability Flags

115.fds4: `-DSPEC_MPI_LC_TRAILING_DOUBLE_UNDERSCORE`
121.pop2: `-DSPEC_MPI_DOUBLE_UNDERSCORE`
126.lammps: `-DMPICH_IGNORE_CXX_SEEK`(*)

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Base Portability Flags (Continued)

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`

122.tachyon: `basepeak = yes`

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

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/flags/MPI2007_flags.20070717.02.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/mpi2007/flags/MPI2007_flags.20070717.02.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC MPI2007 v60.
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