SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

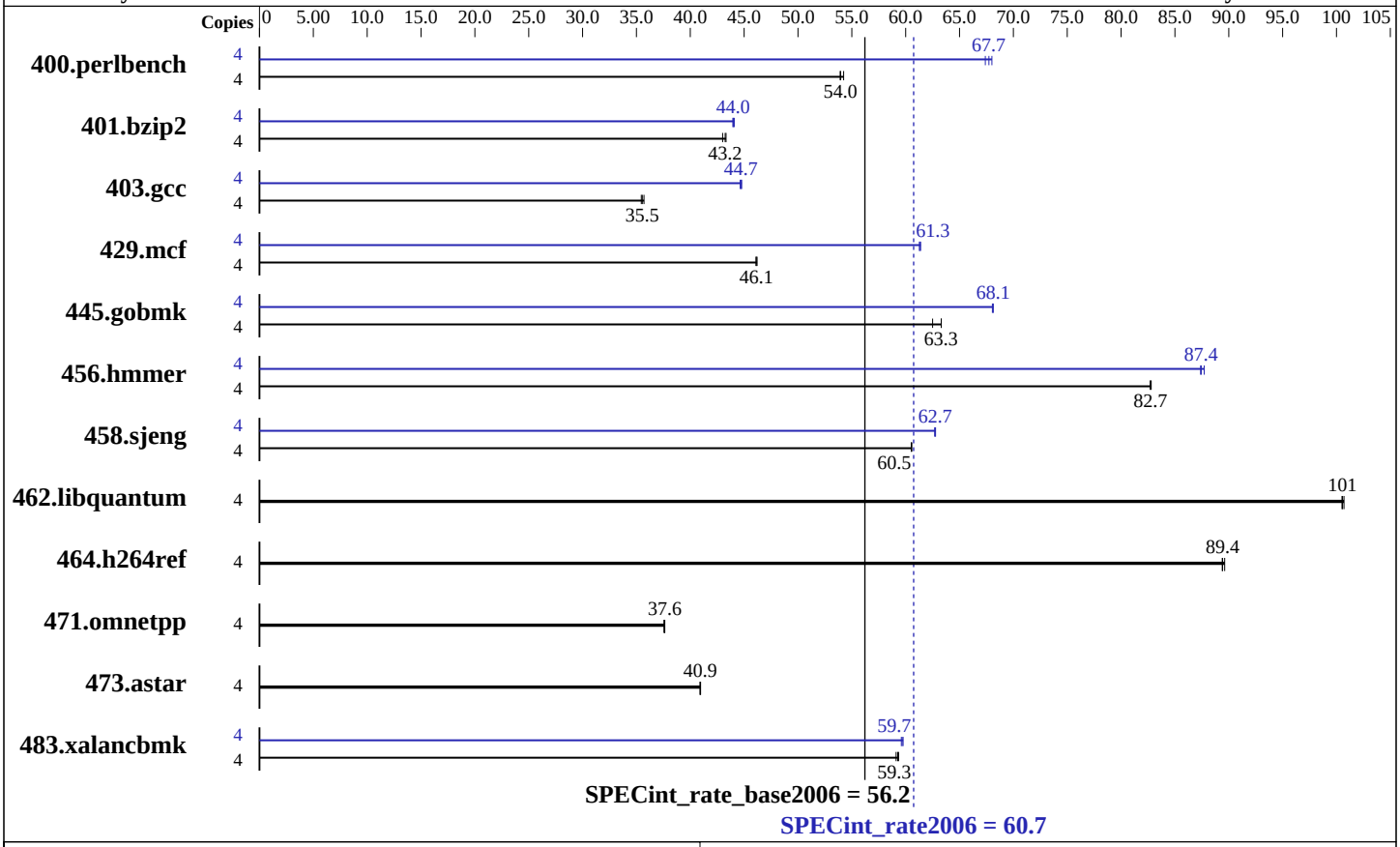
Thunder h2000M (S3992) AMD Opteron 2224 SE

SPECint®_rate2006 = 60.7

SPECint_rate_base2006 = 56.2

CPU2006 license: 49
Test sponsor: Advanced Micro Devices
Tested by: Advanced Micro Devices

Test date: Jul-2007
Hardware Availability: Aug-2007
Software Availability: Oct-2007



Hardware

CPU Name:	AMD Opteron 2224 SE
CPU Characteristics:	
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	None
Other Cache:	None
Memory:	8 GB (8x1GB, DDR2-667 CL4 ECC Reg Dual Rank)
Disk Subsystem:	SATA, 80GB
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 64-bit kernel
Compiler:	The Portland Group (PGI) PGI pgcc 7.1-0 C Compiler PGI pgCC 7.1-0 C++ Compiler
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap 8.0 32-bit Library for Linux

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	721	54.2	725	53.9	**724**	**54.0**	4	580	67.4	**577**	**67.7**	575	68.0
401.bzip2	4	891	43.3	898	43.0	**893**	**43.2**	4	878	44.0	**877**	**44.0**	876	44.1
403.gcc	4	902	35.7	908	35.5	**906**	**35.5**	4	721	44.6	**720**	**44.7**	719	44.8
429.mcf	4	790	46.2	**791**	**46.1**	791	46.1	4	594	61.4	595	61.3	**595**	**61.3**
445.gobmk	4	**663**	**63.3**	663	63.3	671	62.5	4	616	68.1	**616**	**68.1**	617	68.0
456.hmmer	4	451	82.7	**451**	**82.7**	451	82.8	4	427	87.4	425	87.7	**427**	**87.4**
458.sjeng	4	**800**	**60.5**	799	60.6	800	60.5	4	**771**	**62.7**	771	62.8	772	62.7
462.libquantum	4	823	101	825	101	**824**	**101**	4	823	101	825	101	**824**	**101**
464.h264ref	4	**990**	**89.4**	990	89.4	988	89.6	4	**990**	**89.4**	990	89.4	988	89.6
471.omnetpp	4	664	37.6	666	37.6	**664**	**37.6**	4	664	37.6	666	37.6	**664**	**37.6**
473.astar	4	686	41.0	686	40.9	**686**	**40.9**	4	686	41.0	686	40.9	**686**	**40.9**
483.xalancbmk	4	467	59.1	**466**	**59.3**	465	59.3	4	463	59.6	462	59.8	**462**	**59.7**

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

Operating System Notes

```
Environment stack size set to 'unlimited'
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=512 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

Component Notes

```
SUT requires a Tyan Thunder h2000M motherboard (BIOS rev 2.00), a Seagate
Barracuda 7200.10 SATA drive, a SSI EEB 3.51 specification compliant
form-factor case, and a Delta Electronics 500 watt DPS-500GB power supply.
```

General Notes

```
Submitted_by: "Raddatz, Dave" <Dave.Raddatz@amd.com>
Submitted: Tue Aug  7 13:14:49 2007
Submission: cpu2006-20070723-01515.sub
```

Base Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_HAVE_BOOL -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-fast -Mipa=fast -Mipa=inline -Mipa=noarg -Mfprelaxed
-Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi

C++ benchmarks:
-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh
-tp k8-32 -Bstatic_pgi -L/proj/qa/smartheap/SmartHeap_8/lib -lsmartheap

Base Other Flags

C benchmarks:
-w

C++ benchmarks:
-w

Peak Compiler Invocation

C benchmarks:
pgcc

C++ benchmarks:
pgcpp

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64

Continued on next page

Peak Portability Flags (Continued)

403.gcc: -DSPEC_CPU_HAVE_BOOL
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=inline(pass 2) -fast -O4 -Mfprelaxed -Msmartalloc=huge:8 -Mnounroll -tp k8-64 -Bstatic_pgi

401.bzip2: -Mpfi(pass 1) -Mpfo(pass 2) -fast -O4 -Msmartalloc=huge:64 -tp k8-64 -Bstatic_pgi

403.gcc: -fastsse -Mfprelaxed -Msmartalloc=huge:32 -Mipa=fast -Mipa=inline -tp k8-32 -Bstatic_pgi

429.mcf: -fastsse -Mipa=fast -Mipa=inline -Msmartalloc=huge:16 -tp k8-32 -Bstatic_pgi

445.gobmk: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2) -fast -O4 -Msmartalloc=huge:32 -Mfprelaxed -Mnovect -tp k8-64 -Bstatic_pgi

456.hmmer: -fast -Msmartalloc=huge:32 -Mfprelaxed -Msafeptr -Mipa=const -Mipa=ptr -Mipa=arg -tp k8-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2) -Mipa=noarg(pass 2) -Mpfo(pass 2) -fast -Msmartalloc=huge:32 -Mfprelaxed -tp k8-64 -Bstatic_pgi

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: basepeak = yes

483.xalancbmk: -fastsse -O4 -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc --zc_eh -tp k8-32 -Bstatic_pgi -L/proj/qa/smartheap/SmartHeap_8/lib -lsmartheap

Peak Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/pgi710_flags.20090714.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/pgi710_flags.20090714.00.xml`

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