SPEC® CINT2006 Result

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Acer Incorporated

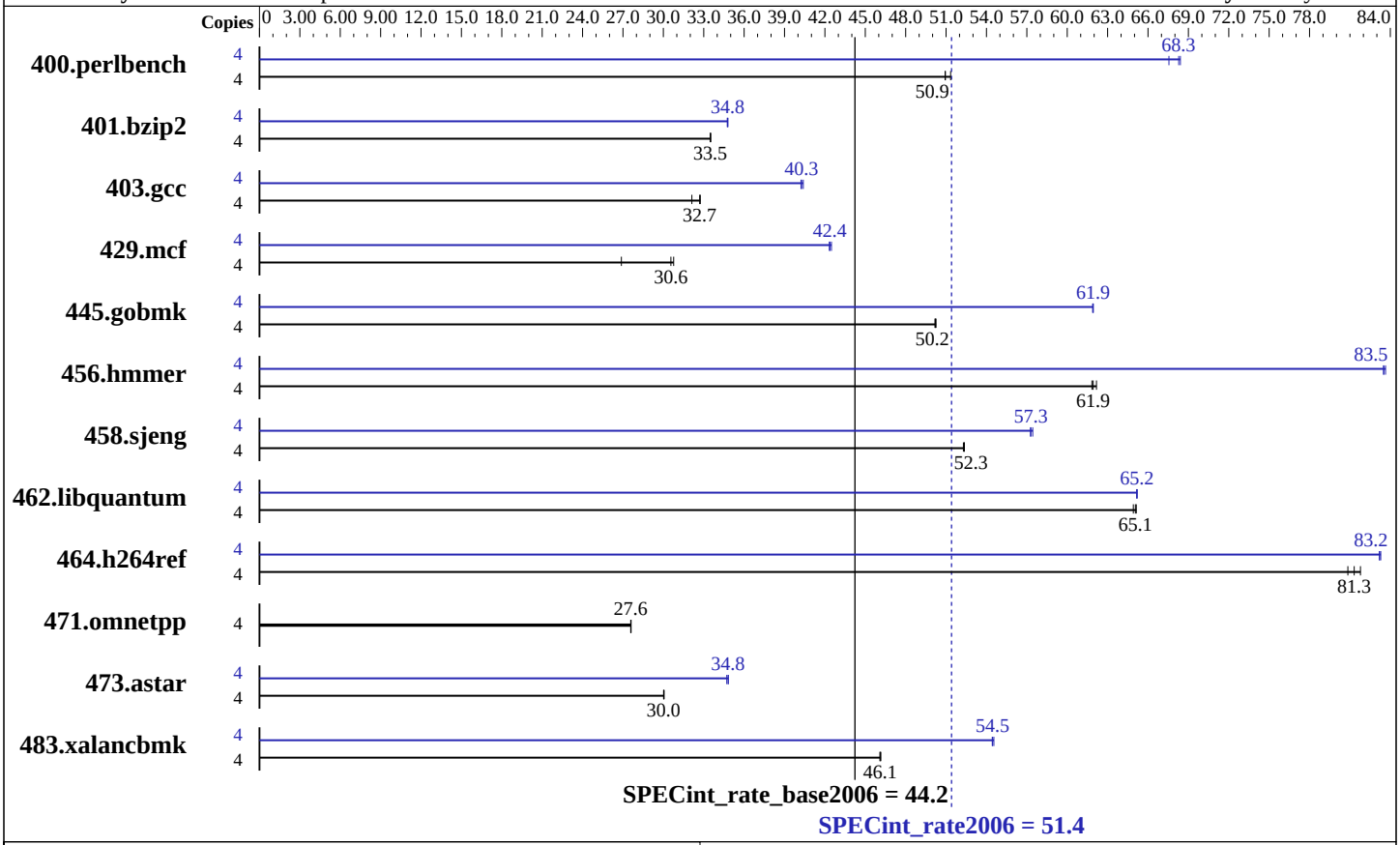
Acer Altos G5450 (AMD Opteron 2360 SE)

SPECint®_rate2006 = 51.4

SPECint_rate_base2006 = 44.2

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Jun-2008
Hardware Availability: May-2008
Software Availability: May-2008



Hardware

CPU Name:	AMD Opteron 2360 SE
CPU Characteristics:	
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core
L3 Cache:	2 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (4x2GB, DDR2-667, CL5, Reg, Dual Rank)
Disk Subsystem:	1x160GB SATA, 7200 RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	PGI Server Complete Version 7.2 PathScale Compiler Suite Version 3.1
Auto Parallel:	No
File System:	ReiserFS
System State:	Run level 3 (Full multiuser with network)
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	761	51.3	767	50.9	**767**	**50.9**	4	578	67.6	571	68.4	**572**	**68.3**
401.bzip2	4	1152	33.5	**1152**	**33.5**	1152	33.5	4	1110	34.8	1111	34.7	**1110**	**34.8**
403.gcc	4	**985**	**32.7**	1003	32.1	983	32.7	4	801	40.2	797	40.4	**800**	**40.3**
429.mcf	4	1357	26.9	1186	30.8	**1194**	**30.6**	4	862	42.3	**861**	**42.4**	859	42.5
445.gobmk	4	836	50.2	**836**	**50.2**	835	50.3	4	677	61.9	678	61.9	**678**	**61.9**
456.hmmer	4	604	61.8	**603**	**61.9**	600	62.2	4	**447**	**83.5**	446	83.6	447	83.5
458.sjeng	4	924	52.4	926	52.3	**925**	**52.3**	4	843	57.4	845	57.3	**845**	**57.3**
462.libquantum	4	**1274**	**65.1**	1273	65.1	1277	64.9	4	**1271**	**65.2**	1272	65.2	1271	65.2
464.h264ref	4	1095	80.8	1082	81.8	**1089**	**81.3**	4	1063	83.3	1064	83.2	**1064**	**83.2**
471.omnetpp	4	907	27.6	**906**	**27.6**	906	27.6	4	907	27.6	**906**	**27.6**	906	27.6
473.astar	4	934	30.1	**935**	**30.0**	935	30.0	4	809	34.7	**807**	**34.8**	806	34.8
483.xalancbmk	4	598	46.2	599	46.1	**599**	**46.1**	4	507	54.4	506	54.6	**507**	**54.5**

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

Operating System Notes

```
'numactl' was used to bind copies to the cores
Environment variable PGI_HUGE_PAGES set to 150
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 1228800' was used to set environment locked pages in memory quantity
Set vm/nr_hugepages=600 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

General Notes

```
This result was measured on the Acer Altos R5250
The Altos R5250 and Altos G5450 are electronically equivalent.
```

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_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 -Mfprelaxed -Msmartalloc=huge:150 -tp barcelona-64 -Bstatic_pgi`

C++ benchmarks:
`-fastsse -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:150 --zc_eh -tp barcelona -Bstatic_pgi`

Base Other Flags

C benchmarks:
`-w -Mipa=jobs:4`

C++ benchmarks:
`-w -Mipa=jobs:4`

Peak Compiler Invocation

C benchmarks (except as noted below):
`pgcc`

400.perlbench: `pathcc`

403.gcc: `pathcc`

445.gobmk: `pathcc`

C++ benchmarks (except as noted below):
`pathCC`

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Peak Compiler Invocation (Continued)

471.omnetpp: pgcpp

Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

400.perlbench: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -IPA:plimit=20000 -LNO:opt=0
-WOPT:if_conv=0 -CG:local_sched_alg=1

401.bzip2: -Mpfi(pass 1) -Mpfo(pass 2) -fast -O4
-Msmartalloc=huge:150 -Mnounroll -tp barcelona-64
-Bstatic_pgi

403.gcc: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -m32 -O3 -OPT:Ofast

429.mcf: -fastsse -Mipa=fast -Mipa=inline:1 -Msmartalloc=huge:150
-tp barcelona -Bstatic_pgi

445.gobmk: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -OPT:alias=restrict -LNO:opt=0
-CG:p2align=on

456.hmmer: -fastsse -Munroll=n:8 -Msmartalloc=huge:150 -Mfprelaxed
-Mvect=partial -Msafeptr -Mipa=const -Mipa=ptr -Mipa=arg
-Mipa=inline -tp barcelona-64 -Bstatic_pgi

458.sjeng: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline:1(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fastsse
-Msmartalloc=huge:150 -Mfprelaxed -tp barcelona-64
-Bstatic_pgi

462.libquantum: -fastsse -Mfprelaxed -Msmartalloc=huge:150 -Munroll=m:8
-Mipa=fast -Mipa=inline -Mipa=noarg -tp barcelona-64
-Bstatic_pgi

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Peak Optimization Flags (Continued)

464.h264ref: `-Mpfi=indirect`(pass 1) `-Mipa=fast`(pass 2) `-Mipa=inline`(pass 2) `-Mpfo=indirect`(pass 2) `-fastsse` `-Msmartalloc=huge:150` `-Mfprelaxed` `-tp barcelona-64` `-Bstatic_pgi`

C++ benchmarks:

471.omnetpp: `basepeak = yes`

473.astar: `-march=barcelona -Ofast -TENV:frame_pointer=off` `-WOPT:if_conv=0 -GRA:optimize_boundary=on -IPA:plimit=525` `-m32 -lsmartheap`

483.xalancbmk: `-march=barcelona -Ofast -m32 -OPT:unroll_times_max=8` `-CG:push_pop_int_saved_regs=off -CG:ptr_load_use=0` `-lsmartheap`

Peak Other Flags

C benchmarks (except as noted below):
`-w -Mipa=jobs:4`(pass 2)

400.perlbench: `No flags used`

401.bzip2: `-w`

403.gcc: `No flags used`

445.gobmk: `No flags used`

C++ benchmarks (except as noted below):
`-L/root/work/cpu2006/amd123GH.libs/32`

471.omnetpp: `-w -Mipa=jobs:4`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/amd123GH-flags.20090713.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/amd123GH-flags.20090713.01.xml`

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