



SPEC[®] CINT2006 Result

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Acer Incorporated

SPECint[®]_rate2006 = 91.9

Acer Altos R5250 (AMD Opteron 2350)

SPECint_rate_base2006 = 80.0

CPU2006 license: 97

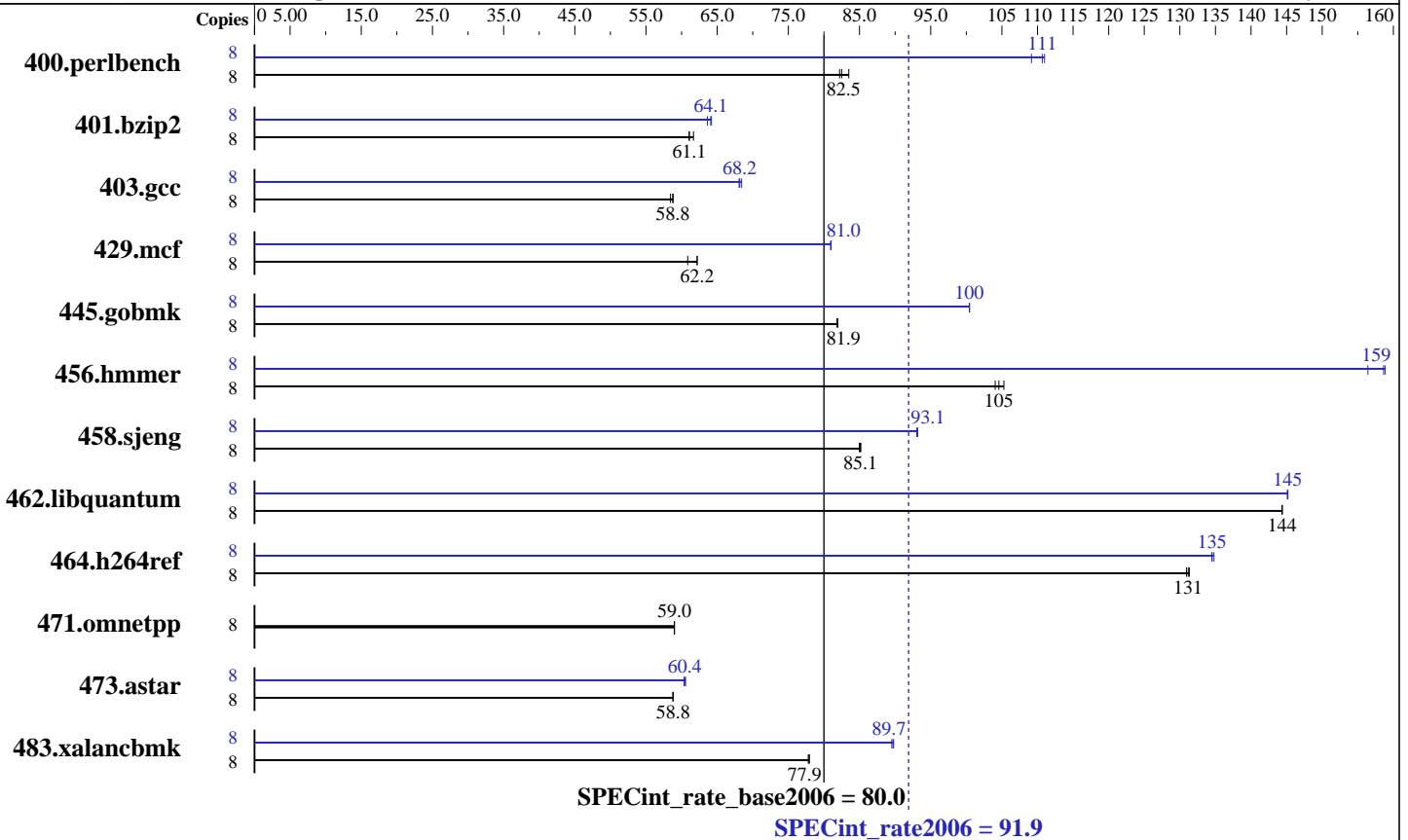
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: May-2008

Hardware Availability: Apr-2008

Software Availability: May-2008



Hardware

CPU Name: AMD Opteron 2350
 CPU Characteristics: 2000
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 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: 16 GB (8x2GB, 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: Default
 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	8	936	83.5	948	82.5	951	82.2	8	716	109	706	111	704	111
401.bzip2	8	1252	61.7	1264	61.1	1265	61.1	8	1213	63.6	1203	64.2	1205	64.1
403.gcc	8	1102	58.4	1095	58.8	1096	58.8	8	941	68.4	946	68.1	945	68.2
429.mcf	8	1199	60.9	1173	62.2	1173	62.2	8	901	81.0	901	81.0	901	81.0
445.gobmk	8	1025	81.9	1025	81.9	1025	81.9	8	836	100	836	100	835	100
456.hmmer	8	714	105	709	105	717	104	8	477	156	470	159	471	159
458.sjeng	8	1137	85.1	1136	85.2	1139	85.0	8	1039	93.2	1040	93.1	1040	93.1
462.libquantum	8	1148	144	1148	144	1148	144	8	1142	145	1142	145	1142	145
464.h264ref	8	1348	131	1350	131	1352	131	8	1316	134	1313	135	1316	135
471.omnetpp	8	848	59.0	848	59.0	847	59.0	8	848	59.0	848	59.0	847	59.0
473.astar	8	955	58.8	955	58.8	955	58.8	8	931	60.4	927	60.6	929	60.4
483.xalancbmk	8	708	77.9	710	77.8	708	77.9	8	617	89.5	615	89.8	615	89.7

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 2457600' was used to set environment locked pages in memory quantity
Set vm/nr_hugepages=150 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

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
```

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Base Portability Flags (Continued)

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):

gcc

400.perlbench: pathcc

403.gcc: pathcc

445.gobmk: pathcc

C++ benchmarks (except as noted below):

pathCC

471.omnetpp: pgcpp



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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.xalanbmk: -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

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

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Peak Optimization Flags (Continued)

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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