



# SPEC® CINT2006 Result

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## Acer Incorporated

### SPECint®\_rate2006 = 106

### Acer Altos R5250 (AMD Opteron 2360 SE)

### SPECint\_rate\_base2006 = 92.3

CPU2006 license: 97

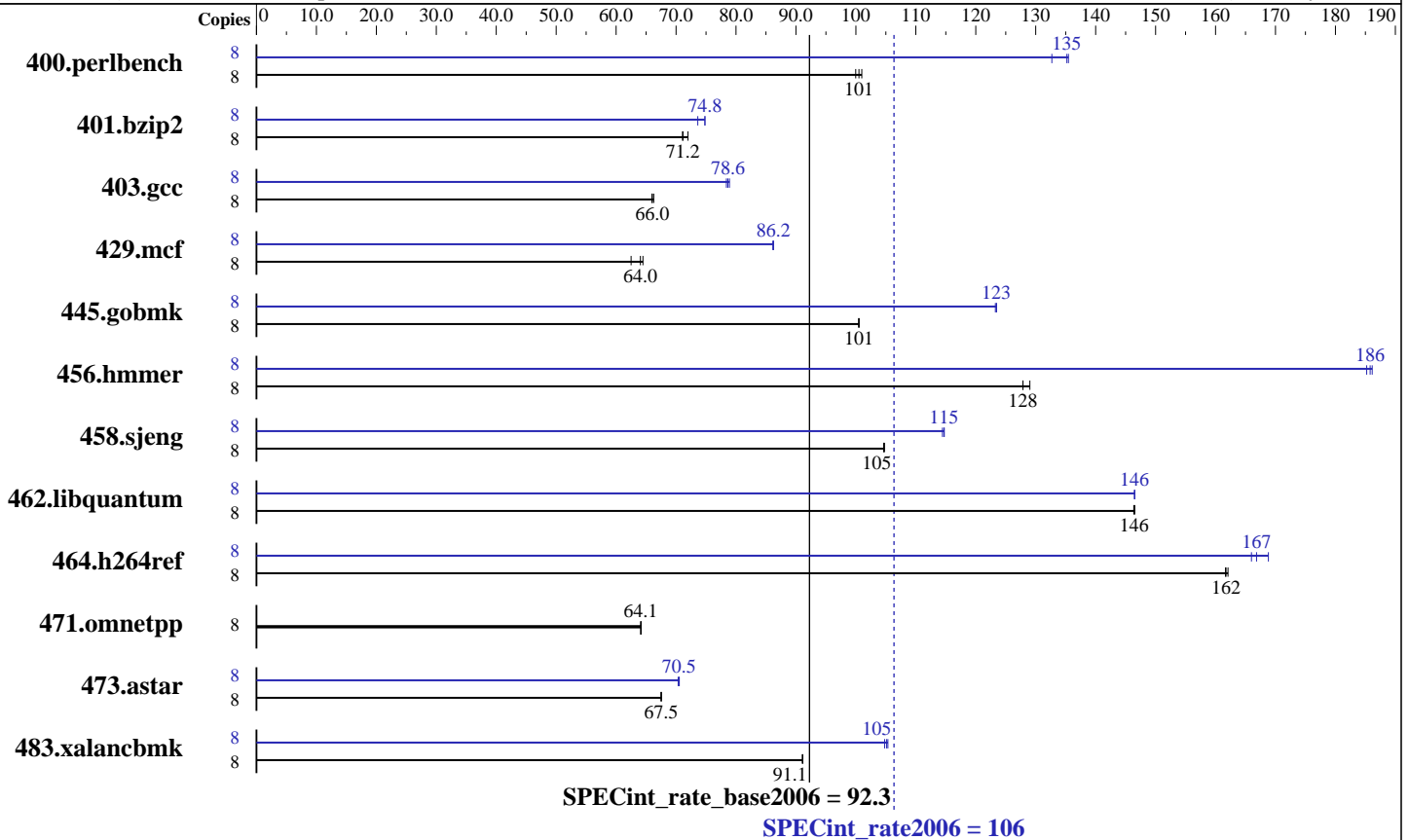
Test sponsor: Acer Incorporated

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: 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: 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	8	774	101	782	100	<b>778</b>	<b>101</b>	8	589	133	577	135	<b>578</b>	<b>135</b>
401.bzip2	8	1072	72.0	1086	71.1	<b>1085</b>	<b>71.2</b>	8	1049	73.6	<b>1032</b>	<b>74.8</b>	1032	74.8
403.gcc	8	972	66.3	976	66.0	<b>975</b>	<b>66.0</b>	8	816	78.9	821	78.4	<b>819</b>	<b>78.6</b>
429.mcf	8	1167	62.5	<b>1139</b>	<b>64.0</b>	1132	64.5	8	847	86.2	<b>846</b>	<b>86.2</b>	846	86.3
445.gobmk	8	<b>835</b>	<b>101</b>	835	100	835	101	8	681	123	<b>680</b>	<b>123</b>	680	123
456.hammer	8	578	129	584	128	<b>584</b>	<b>128</b>	8	403	185	401	186	<b>402</b>	<b>186</b>
458.sjeng	8	925	105	924	105	<b>925</b>	<b>105</b>	8	844	115	<b>844</b>	<b>115</b>	846	114
462.libquantum	8	1131	147	1133	146	<b>1132</b>	<b>146</b>	8	<b>1131</b>	<b>146</b>	1131	146	1131	147
464.h264ref	8	1095	162	<b>1095</b>	<b>162</b>	1092	162	8	1067	166	1049	169	<b>1061</b>	<b>167</b>
471.omnetpp	8	<b>780</b>	<b>64.1</b>	780	64.1	779	64.2	8	<b>780</b>	<b>64.1</b>	780	64.1	779	64.2
473.astar	8	832	67.5	<b>832</b>	<b>67.5</b>	831	67.6	8	798	70.4	796	70.5	<b>797</b>	<b>70.5</b>
483.xalancbmk	8	<b>606</b>	<b>91.1</b>	606	91.1	606	91.1	8	527	105	524	105	<b>525</b>	<b>105</b>

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
```

## 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



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## 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.hmmmer: -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.hmmcr: -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.hmmcr: -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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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