



# SPEC<sup>®</sup> CINT2006 Result

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## Acer Incorporated

SPECint<sup>®</sup>\_rate2006 = 51.4

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

SPECint\_rate\_base2006 = 44.2

CPU2006 license: 97

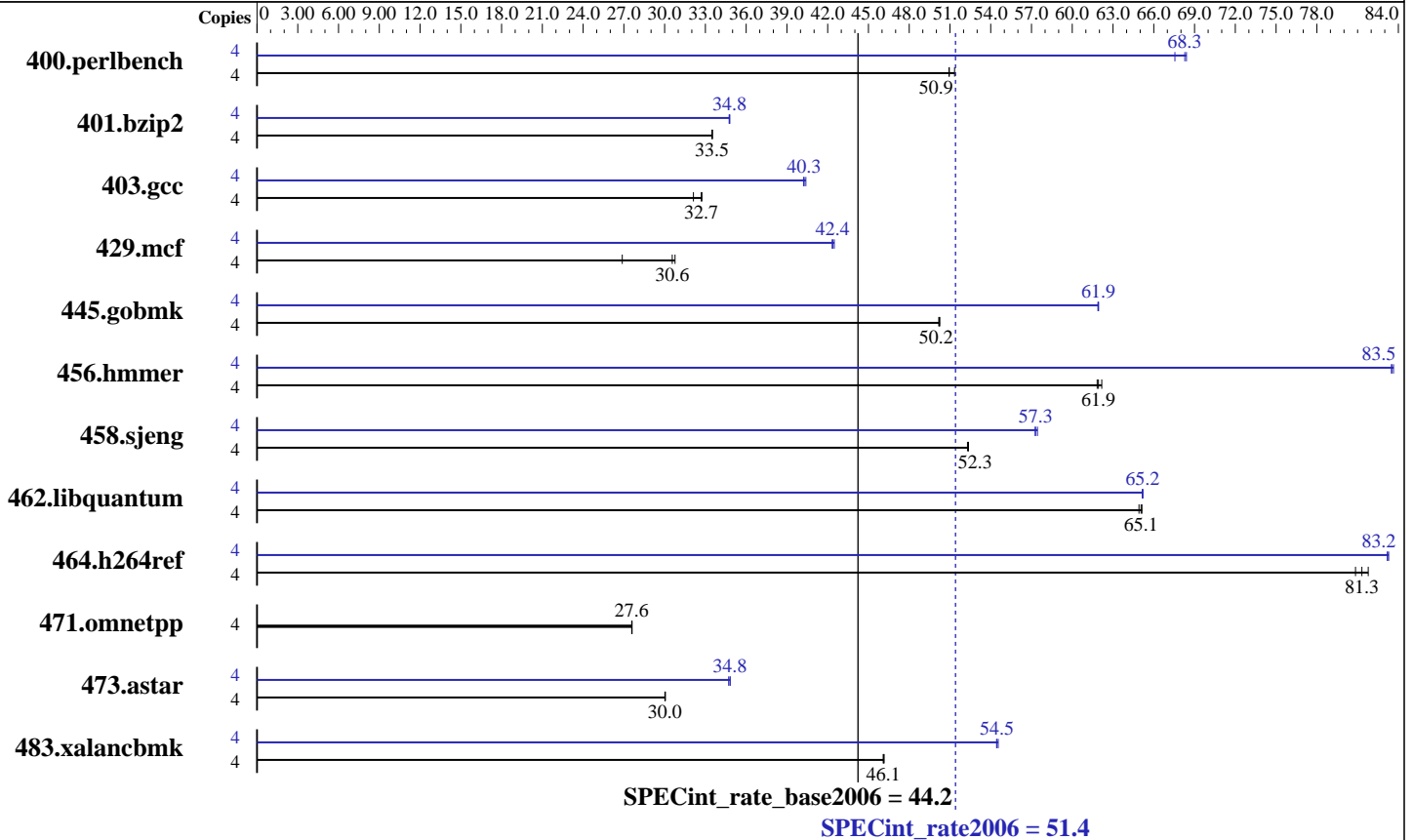
Test sponsor: Acer Incorporated

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	<b>767</b>	<b>50.9</b>	4	578	67.6	571	68.4	<b>572</b>	<b>68.3</b>
401.bzip2	4	1152	33.5	<b>1152</b>	<b>33.5</b>	1152	33.5	4	1110	34.8	1111	34.7	<b>1110</b>	<b>34.8</b>
403.gcc	4	<b>985</b>	<b>32.7</b>	1003	32.1	983	32.7	4	801	40.2	797	40.4	<b>800</b>	<b>40.3</b>
429.mcf	4	1357	26.9	1186	30.8	<b>1194</b>	<b>30.6</b>	4	862	42.3	<b>861</b>	<b>42.4</b>	859	42.5
445.gobmk	4	836	50.2	<b>836</b>	<b>50.2</b>	835	50.3	4	677	61.9	678	61.9	<b>678</b>	<b>61.9</b>
456.hammer	4	604	61.8	<b>603</b>	<b>61.9</b>	600	62.2	4	<b>447</b>	<b>83.5</b>	446	83.6	447	83.5
458.sjeng	4	924	52.4	926	52.3	<b>925</b>	<b>52.3</b>	4	843	57.4	845	57.3	<b>845</b>	<b>57.3</b>
462.libquantum	4	<b>1274</b>	<b>65.1</b>	1273	65.1	1277	64.9	4	<b>1271</b>	<b>65.2</b>	1272	65.2	1271	65.2
464.h264ref	4	1095	80.8	1082	81.8	<b>1089</b>	<b>81.3</b>	4	1063	83.3	1064	83.2	<b>1064</b>	<b>83.2</b>
471.omnetpp	4	907	27.6	<b>906</b>	<b>27.6</b>	906	27.6	4	907	27.6	<b>906</b>	<b>27.6</b>	906	27.6
473.astar	4	934	30.1	<b>935</b>	<b>30.0</b>	935	30.0	4	809	34.7	<b>807</b>	<b>34.8</b>	806	34.8
483.xalancbmk	4	598	46.2	599	46.1	<b>599</b>	<b>46.1</b>	4	507	54.4	506	54.6	<b>507</b>	<b>54.5</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 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



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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.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

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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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