



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Acer Incorporated

## SPECint®\_rate2006 = 116

## Altos G5450 (AMD Opteron 2376)

## SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

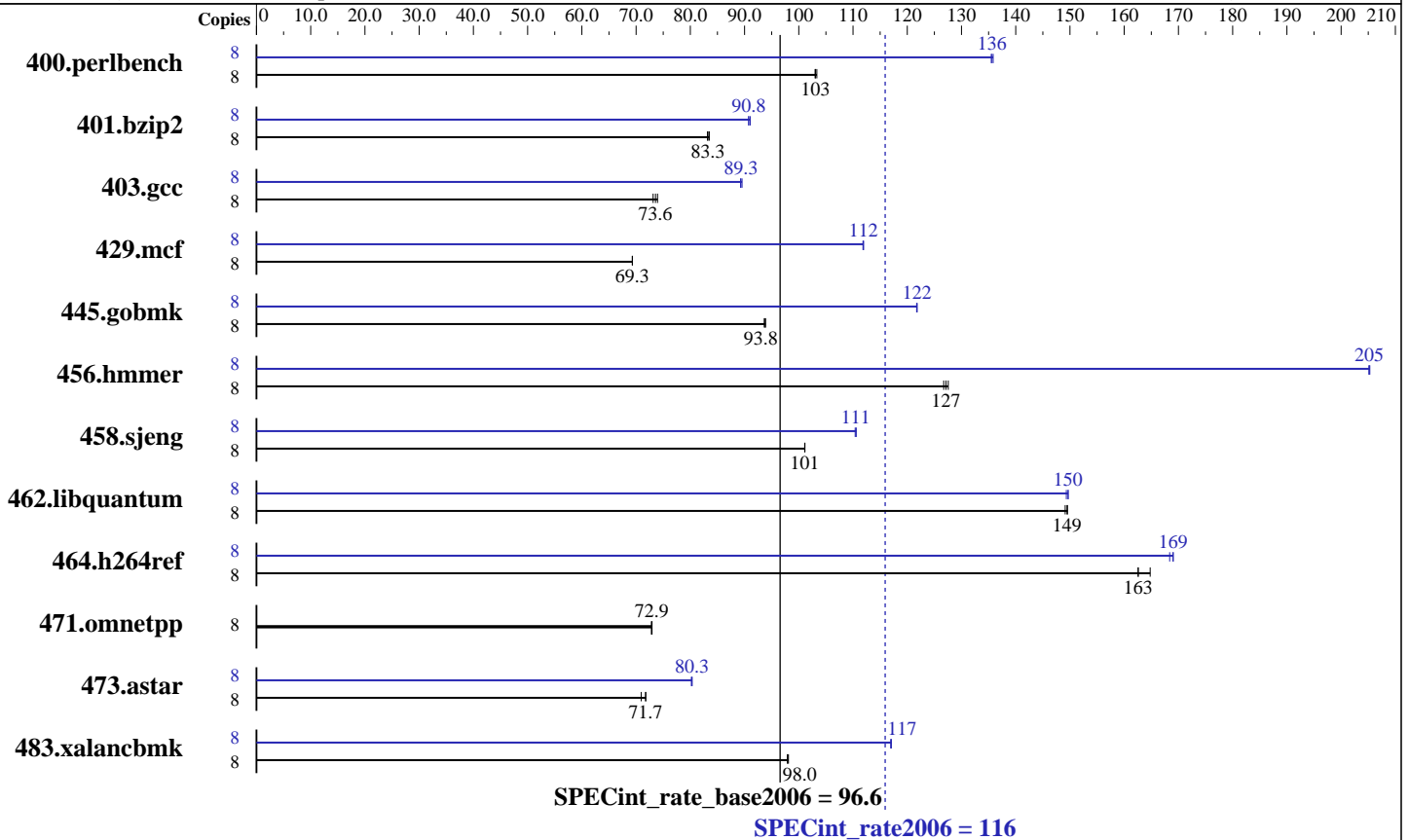
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Dec-2008

Hardware Availability: Nov-2008

Software Availability: Jun-2008



### Hardware

CPU Name: AMD Opteron 2376  
 CPU Characteristics:  
 CPU MHz: 2300  
 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: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 32 GB (8x4 GB, DDR2-667, CL5, Reg, Dual Rank)  
 Disk Subsystem: 1 x 320 GB 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 3.2  
 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: binutils 2.18 32-bit and 64-bit libhugetlbfs libraries SmartHeap 8.1 32-bit Library for Linux



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 116

Altos G5450 (AMD Opteron 2376)

SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

Test date: Dec-2008

Test sponsor: Acer Incorporated

Hardware Availability: Nov-2008

Tested by: Acer Incorporated

Software Availability: Jun-2008

## Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	759	103	756	103	<b>758</b>	<b>103</b>	8	575	136	<b>576</b>	<b>136</b>	577	135
401.bzip2	8	925	83.5	<b>927</b>	<b>83.3</b>	928	83.2	8	848	91.1	851	90.8	<b>850</b>	<b>90.8</b>
403.gcc	8	881	73.1	<b>875</b>	<b>73.6</b>	871	74.0	8	719	89.5	722	89.3	<b>721</b>	<b>89.3</b>
429.mcf	8	1053	69.3	1053	69.3	<b>1053</b>	<b>69.3</b>	8	652	112	<b>652</b>	<b>112</b>	652	112
445.gobmk	8	894	93.9	<b>895</b>	<b>93.8</b>	896	93.6	8	689	122	<b>689</b>	<b>122</b>	689	122
456.hammer	8	<b>587</b>	<b>127</b>	589	127	585	128	8	<b>364</b>	<b>205</b>	364	205	364	205
458.sjeng	8	957	101	958	101	<b>957</b>	<b>101</b>	8	875	111	<b>876</b>	<b>111</b>	877	110
462.libquantum	8	1108	150	1112	149	<b>1109</b>	<b>149</b>	8	1110	149	<b>1108</b>	<b>150</b>	1107	150
464.h264ref	8	<b>1089</b>	<b>163</b>	1089	163	1074	165	8	1051	168	<b>1048</b>	<b>169</b>	1047	169
471.omnetpp	8	686	72.9	687	72.8	<b>686</b>	<b>72.9</b>	8	686	72.9	687	72.8	<b>686</b>	<b>72.9</b>
473.astar	8	792	70.9	<b>783</b>	<b>71.7</b>	782	71.8	8	700	80.2	699	80.3	<b>699</b>	<b>80.3</b>
483.xalancbmk	8	564	97.9	<b>563</b>	<b>98.0</b>	563	98.1	8	472	117	472	117	<b>472</b>	<b>117</b>

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

## Submit Notes

The config file option 'submit' was used.  
'numactl' was used to bind copies to the cores

## Operating System Notes

The libhugetlbfs libraries were installed using the installation rpms that came with the distribution.

'ulimit -s unlimited' was used to set environment stack size  
'ulimit -l 2097152' was used to set environment locked pages in memory limit

Set vm/nr\_hugepages=7168 in /etc/sysctl.conf  
mount -t hugetlbfs nodev /mnt/hugepages

## General Notes

Environment variables set by runspec before the start of the run:  
HUGETLB\_MORECORE = "yes"  
LD\_LIBRARY\_PATH = "/usr/cpu2006/amd909gh-libs/64:/usr/cpu2006/amd909gh-libs/32"



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 116

Altos G5450 (AMD Opteron 2376)

SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Dec-2008

Hardware Availability: Nov-2008

Software Availability: Jun-2008

## 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:

-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed  
-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic\_pgi

C++ benchmarks:

-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed  
--zc\_eh -Mipa=fast -Mipa=inline:10 -tp barcelona-32 -Bstatic\_pgi

## Base Other Flags

C benchmarks:

-Mipa=jobs:4

C++ benchmarks:

-Mipa=jobs:4

## Peak Compiler Invocation

C benchmarks (except as noted below):

pathcc

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 116

Altos G5450 (AMD Opteron 2376)

SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Dec-2008

Hardware Availability: Nov-2008

Software Availability: Jun-2008

## Peak Compiler Invocation (Continued)

456.hmmcr: pgcc

462.libquantum: pgcc

C++ benchmarks (except as noted below):

pgcpp

483.xalancbmk: pathCC

## 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)  
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
 -L/usr/lib64 -lhugetlbfs(pass 2) -Ofast -IPA:plimit=20000  
 -IPA:field\_reorder=on -LNO:opt=0 -WOPT:if\_conv=0  
 -CG:local\_sched\_alg=1

401.bzip2: -march=barcelona -O3 -OPT:alias=disjoint -OPT:Ofast  
 -OPT:goto=off -INLINE:aggressive=on -CG:local\_sched\_alg=1  
 -m3dnow  
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT  
 -L/usr/lib64 -lhugetlbfs

403.gcc: -march=barcelona -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2) -Ofast -OPT:malloc\_alg=1  
 -LNO:trip\_count=256 -LNO:prefetch\_ahead=10  
 -CG:prefer\_lru\_reg=off -m32

429.mcf: -march=barcelona -O3 -ipa -INLINE:aggressive=on  
 -CG:gcm=off -GRA:prioritize\_by\_density=on -m32  
 -L/usr/lib -lhugetlbfs

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 116

Altos G5450 (AMD Opteron 2376)

SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Dec-2008

Hardware Availability: Nov-2008

Software Availability: Jun-2008

## Peak Optimization Flags (Continued)

445.gobmk: -march=barcelona -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2)  
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
 -L/usr/lib64 -lhugetlbfs(pass 2) -O3 -OPT:alias=restrict  
 -LNO:prefetch=1 -LNO:ignore\_feedback=off -CG:p2align=on

456.hmmcr: -Mvect=cachesize:6291456 -fastsse -Mvect=partial  
 -Munroll=n:8 -Msmartalloc=huge -Msafeptr -Mprefetch=t0  
 -Mfprelaxed -Mipa=const -Mipa=ptr -Mipa=arg -Mipa=inline  
 -tp barcelona-64 -Bstatic\_pgi

458.sjeng: -march=barcelona -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2)  
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
 -L/usr/lib64 -lhugetlbfs(pass 2) -O3 -ipa  
 -LNO:ignore\_feedback=off -LNO:full\_unroll=10 -LNO:fusion=0  
 -LNO:fission=2 -IPA:pu\_reorder=2 -CG:ptr\_load\_use=0  
 -OPT:unroll\_times\_max=8 -INLINE:aggressive=on

462.libquantum: -Mvect=cachesize:6291456 -fastsse -Munroll=m:8  
 -Msmartalloc=huge -Mprefetch=distance:4 -Mfprelaxed  
 -Mipa=fast -Mipa=inline -Mipa=noarg -tp barcelona-64  
 -Bstatic\_pgi

464.h264ref: -march=barcelona -fb\_create fbdata(pass 1)  
 -fb\_opt fbdata(pass 2)  
 -Wl,-T/usr/share/libhugetlbfs/ldscripts/elf\_x86\_64.xBDT(pass 2)  
 -L/usr/lib64 -lhugetlbfs(pass 2) -O3 -IPA:plimit=20000  
 -OPT:alias=disjoint -LNO:prefetch=0 -CG:ptr\_load\_use=0  
 -CG:push\_pop\_int\_saved\_regs=off -CG:prefer\_lru\_reg=off

C++ benchmarks:

471.omnetpp: basepeak = yes

473.astar: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)  
 -Mipa=inline:6(pass 2) -Mvect=cachesize:6291456 -fastsse  
 -O4 -Msmartalloc=huge -Msafeptr=global -Mfprelaxed  
 --zc\_eh -tp barcelona-32 -Bstatic\_pgi

483.xalancbmk: -march=barcelona -Ofast -INLINE:aggressive=on -m32  
 -L/root/work/libraries/SmartHeap\_8.1/lib -lsmarheap

## Peak Other Flags

C benchmarks:

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Acer Incorporated

SPECint\_rate2006 = 116

Altos G5450 (AMD Opteron 2376)

SPECint\_rate\_base2006 = 96.6

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Dec-2008

Hardware Availability: Nov-2008

Software Availability: Jun-2008

## Peak Other Flags (Continued)

456.hmmer: -Mipa=jobs:4

462.libquantum: -Mipa=jobs:4

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

483.xalancbmk: No flags used

The flags files that were used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/pgi72\\_linux\\_flags.html](http://www.spec.org/cpu2006/flags/pgi72_linux_flags.html)  
[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090710.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.html)  
<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.html>

You can also download the XML flags sources by saving the following links:

[http://www.spec.org/cpu2006/flags/pgi72\\_linux\\_flags.xml](http://www.spec.org/cpu2006/flags/pgi72_linux_flags.xml)  
[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090710.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090710.xml)  
<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 00:21:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 26 May 2009.