



SPEC[®] CFP2006 Result

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Acer Incorporated

SPECfp[®]_rate2006 = 48.2

Acer Altos G5450 (AMD Opteron 2360 SE)

SPECfp_rate_base2006 = 43.4

CPU2006 license: 97

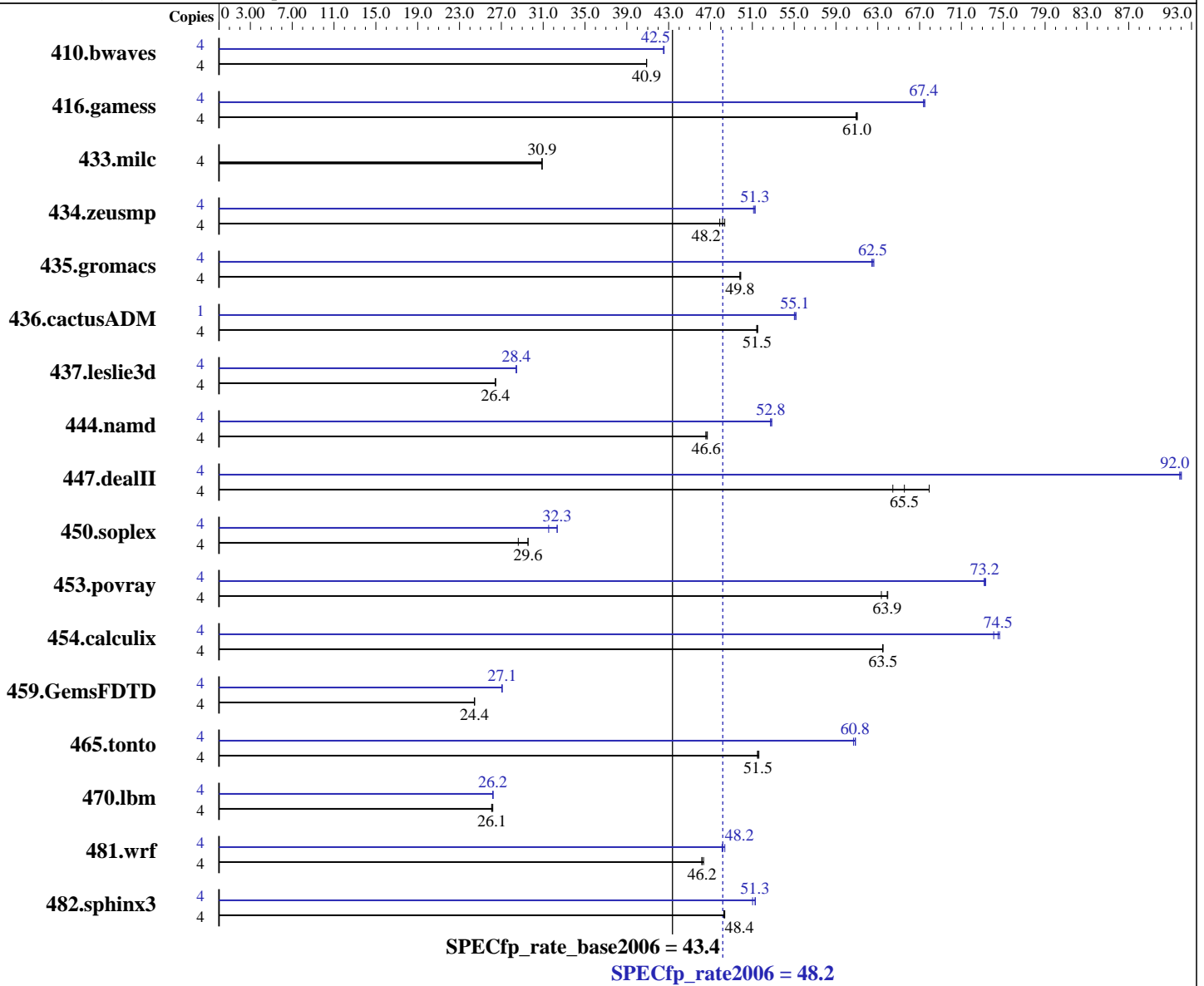
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Feb-2009

Hardware Availability: May-2008

Software Availability: Oct-2008



Hardware

CPU Name: AMD Opteron 2360 SE
 CPU Characteristics: 2500
 CPU MHz: Integrated
 FPU: 4 cores, 1 chip, 4 cores/chip
 CPU(s) enabled: 1,2 chips
 CPU(s) orderable: 64 KB I + 64 KB D on chip per core
 Primary Cache: 512 KB I+D on chip per core
 Secondary Cache:

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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: Yes
 File System: ReiserFS
 System State: Run level 3 (Full multiuser with network)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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L3 Cache: 2 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4x4 GB, DDR2-667, CL5, Reg, Dual Rank)
Disk Subsystem: 1 x 160 GB SATA, 7200 RPM
Other Hardware: None

Other Software: binutils 2.18
32-bit and 64-bit libhugetlbfs libraries

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1330	40.9	1329	40.9	<u>1329</u>	<u>40.9</u>	4	1277	42.6	<u>1278</u>	<u>42.5</u>	1279	42.5
416.gamess	4	1283	61.0	<u>1283</u>	<u>61.0</u>	1286	60.9	4	1160	67.5	<u>1162</u>	<u>67.4</u>	1162	67.4
433.milc	4	<u>1189</u>	<u>30.9</u>	1189	30.9	1188	30.9	4	<u>1189</u>	<u>30.9</u>	1189	30.9	1188	30.9
434.zeusmp	4	753	48.4	760	47.9	<u>756</u>	<u>48.2</u>	4	710	51.3	712	51.1	<u>710</u>	<u>51.3</u>
435.gromacs	4	572	49.9	573	49.8	<u>573</u>	<u>49.8</u>	4	456	62.6	<u>457</u>	<u>62.5</u>	458	62.4
436.cactusADM	4	<u>929</u>	<u>51.5</u>	928	51.5	930	51.4	1	217	55.2	217	55.0	<u>217</u>	<u>55.1</u>
437.leslie3d	4	1422	26.4	1423	26.4	<u>1422</u>	<u>26.4</u>	4	<u>1322</u>	<u>28.4</u>	1323	28.4	1322	28.4
444.namd	4	689	46.6	687	46.7	<u>688</u>	<u>46.6</u>	4	608	52.7	<u>608</u>	<u>52.8</u>	607	52.9
447.dealII	4	<u>698</u>	<u>65.5</u>	674	67.9	710	64.4	4	498	91.9	497	92.0	<u>498</u>	<u>92.0</u>
450.soplex	4	1166	28.6	<u>1129</u>	<u>29.6</u>	1129	29.6	4	1058	31.5	<u>1032</u>	<u>32.3</u>	1032	32.3
453.povray	4	336	63.3	333	64.0	<u>333</u>	<u>63.9</u>	4	<u>291</u>	<u>73.2</u>	291	73.2	290	73.3
454.calculix	4	520	63.5	520	63.5	<u>520</u>	<u>63.5</u>	4	<u>443</u>	<u>74.5</u>	445	74.1	442	74.6
459.GemsFDTD	4	1736	24.4	1738	24.4	<u>1737</u>	<u>24.4</u>	4	<u>1568</u>	<u>27.1</u>	1567	27.1	1569	27.0
465.tonto	4	<u>764</u>	<u>51.5</u>	762	51.6	764	51.5	4	<u>647</u>	<u>60.8</u>	649	60.7	647	60.9
470.lbm	4	2108	26.1	<u>2105</u>	<u>26.1</u>	2099	26.2	4	2099	26.2	<u>2098</u>	<u>26.2</u>	2097	26.2
481.wrf	4	968	46.2	<u>967</u>	<u>46.2</u>	964	46.3	4	924	48.4	929	48.1	<u>927</u>	<u>48.2</u>
482.sphinx3	4	1615	48.3	<u>1612</u>	<u>48.4</u>	1612	48.4	4	1528	51.0	<u>1521</u>	<u>51.3</u>	1520	51.3

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=3584 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages



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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"

NCPUS = "4"

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

Fortran benchmarks:

pgf95

Benchmarks using both Fortran and C:

pgcc pgf95

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
 416.gamess: -DSPEC_CPU_LP64
 433.milc: -DSPEC_CPU_LP64
 434.zeusmp: -DSPEC_CPU_LP64
 435.gromacs: -DSPEC_CPU_LP64 -Mnomain
 436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_LP64
 450.soplex: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64 -Mnomain
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
 482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed

-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed  
--zc_eh -Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

Fortran benchmarks:

```
-Mvect=cachesize:6291456 -fastsse -Mfprelaxed -Msmartalloc=huge  
-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

Benchmarks using both Fortran and C:

```
-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge -Mfprelaxed  
-Mipa=fast -Mipa=inline -tp barcelona-64 -Bstatic_pgi
```

Base Other Flags

C benchmarks:

```
-Mipa=jobs:4
```

C++ benchmarks:

```
-Mipa=jobs:4
```

Fortran benchmarks:

```
-Mipa=jobs:4
```

Benchmarks using both Fortran and C:

```
-Mipa=jobs:4
```

Peak Compiler Invocation

C benchmarks:

```
pgcc
```

C++ benchmarks (except as noted below):

```
pathCC
```

```
444.namd: pgcpp
```

Fortran benchmarks (except as noted below):

```
pathf95
```

```
410.bwaves: pgf95
```

```
434.zeusmp: pgf95
```

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Peak Compiler Invocation (Continued)

437.leslie3d: pgf95

Benchmarks using both Fortran and C (except as noted below):

pgcc pgf95

435.gromacs: pathcc pathf95

481.wrf: pathcc pathf95

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
 416.gamess: -DSPEC_CPU_LP64
 433.milc: -DSPEC_CPU_LP64
 434.zeusmp: -DSPEC_CPU_LP64
 435.gromacs: -DSPEC_CPU_LP64
 436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64 -Mnomain
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
 482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: -Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge
-Mprefetch=t0 -Mloop32 -Mfprelaxed -Mipa=fast -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

482.sphinx3: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2)
-Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mvect=cachesize:6291456 -fastsse -Mfprelaxed -Msmartalloc
-tp barcelona-64 -Bstatic_pgi

C++ benchmarks:

444.namd: -Mpfi(pass 1) -Mpfo(pass 2) -Mipa=fast(pass 2)
-Mipa=inline(pass 2) -Mvect=cachesize:6291456 -fastsse
-Munroll=n:4 -Munroll=m:8 -Msmartalloc=huge -Mnodepchk

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Peak Optimization Flags (Continued)

444.namd (continued):

-Mfprelaxed --zc_eh -tp barcelona-64 -Bstatic_pgi

447.dealIII: -march=barcelona -Ofast -static -INLINE:aggressive=on
-fno-exceptions -m32

450.soplex: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -L/usr/lib -lhugetlbfs(pass 2) -O3
-INLINE:aggressive=on -OPT:IEEE_arith=3
-OPT:IEEE_NaN_Inf=off -OPT:fold_unsigned_relops=on
-OPT:malloc_alg=1 -CG:load_exe=0 -fno-exceptions -m32

453.povray: -march=barcelona -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast -INLINE:aggressive=on

Fortran benchmarks:

410.bwaves: -Mvect=cachesize:6291456 -fastsse -Msmartalloc
-Mprefetch=nta -Mfprelaxed -Mipa=fast -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

416.gamess: -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) -O2 -OPT:Ofast -OPT:ro=3
-OPT:unroll_size=256

434.zeusmp: -Mvect=cachesize:6291456 -fastsse -Mfprelaxed
-Mprefetch=distance:8 -Mprefetch=t0 -Msmartalloc=huge
-Msmartalloc=hugebss -Mipa=fast -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

437.leslie3d: -Mpfi=indirect(pass 1) -Mpfo=indirect(pass 2)
-Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mvect=cachesize:6291456 -fastsse -Mvect=fuse
-Msmartalloc=huge -Mprefetch=distance:8 -Mprefetch=t0
-Mfprelaxed -tp barcelona-64 -Bstatic_pgi

459.GemsFDTD: -march=barcelona -Ofast -LNO:fission=2 -LNO:simd=2
-LNO:prefetch_ahead=1 -CG:load_exe=0 -CG:prefer_lru_reg=off
-OPT:malloc_alg=1
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
-L/usr/lib64 -lhugetlbfs

465.tonto: -march=barcelona -Ofast -OPT:alias=no_f90_pointer_alias
-LNO:blocking=off -CG:load_exe=1 -IPA:plimit=525
-OPT:malloc_alg=1
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
-L/usr/lib64 -lhugetlbfs

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -march=barcelona -Ofast -OPT:rsqrt=2 -OPT:malloc_alg=1
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
-L/usr/lib64 -lhugetlbfs

436.cactusADM: -Mvect=cachesize:6291456 -fastsse -Mconcur
-Msmartalloc=huge -Mfprelaxed -Mipa=fast -Mipa=inline
-tp barcelona-64 -Bstatic_pgi

454.calculix: -Mphi=indirect(pass 1) -Mpfo=indirect(pass 2)
-Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mvect=cachesize:6291456 -fastsse -Msmartalloc=huge
-Mprefetch=t0 -Mpre -Mfprelaxed -tp barcelona-64
-Bstatic_pgi

481.wrf: -march=barcelona -Ofast -LNO:blocking=off
-LNO:prefetch_ahead=10 -LANG:copyinout=off
-IPA:callee_limit=5000 -GRA:prioritize_by_density=on
-OPT:malloc_alg=1 -m3dnow
-Wl,-T/usr/share/libhugetlbfs/ldscripts/elf_x86_64.xBDT
-L/usr/lib64 -lhugetlbfs

Peak Other Flags

C benchmarks:

-Mipa=jobs:4(pass 2)

C++ benchmarks:

444.namd: -Mipa=jobs:4(pass 2)

Fortran benchmarks (except as noted below):

-Mipa=jobs:4(pass 2)

416.gamess: No flags used

459.GemsFDTD: No flags used

465.tonto: No flags used

Benchmarks using both Fortran and C (except as noted below):

-Mipa=jobs:4(pass 2)

435.gromacs: No flags used

481.wrf: No flags used



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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/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/CPU2006_flags.20090710.xml
<http://www.spec.org/cpu2006/flags/amd-platform-amd909gh.xml>

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Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 23:20:02 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 March 2009.