Acer Incorporated

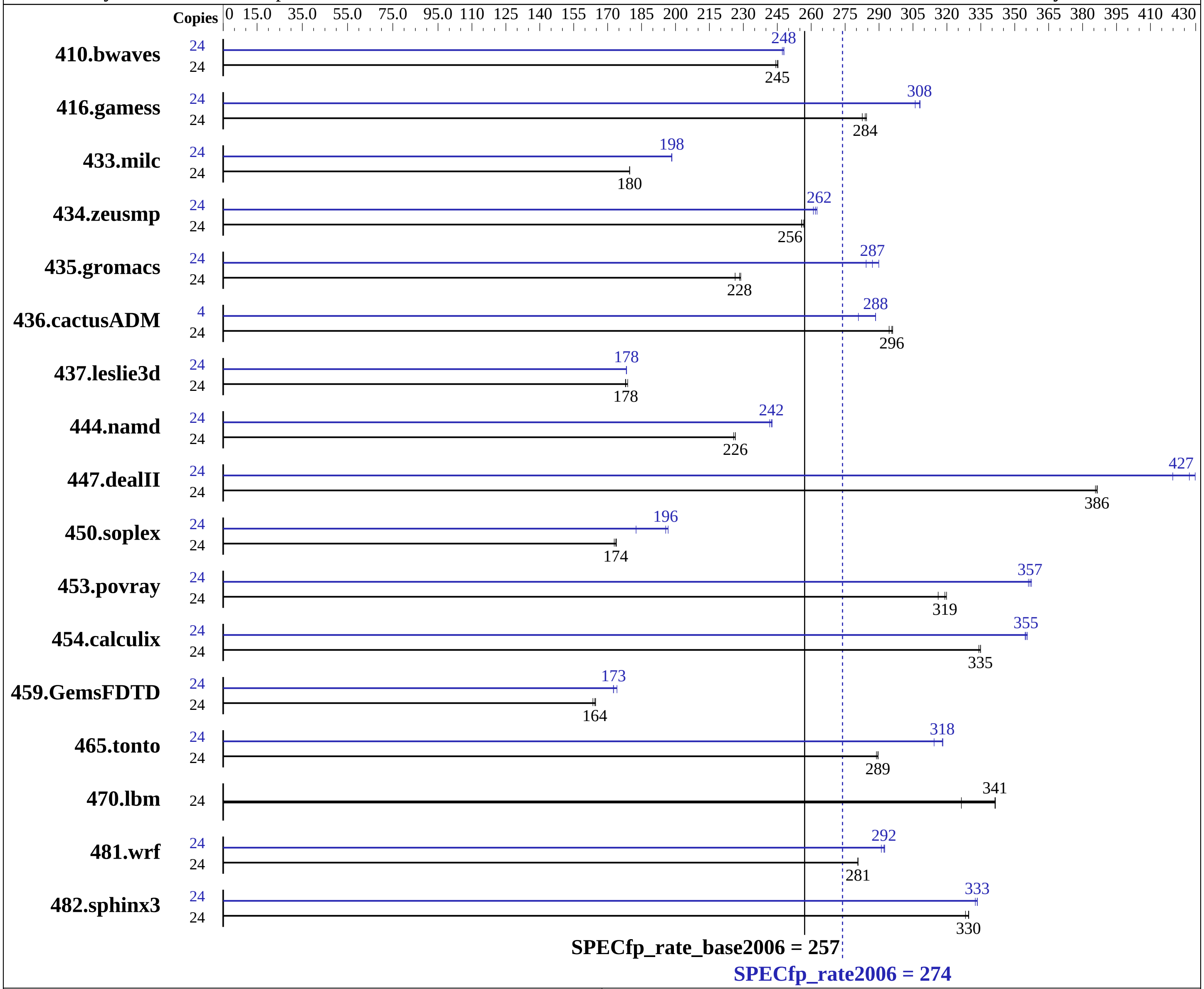
Acer AW2000h-AW175h F1 (AMD Opteron 6166 HE)

SPECfp®_rate2006 = 274

SPECfp_rate_base2006 = 257

CPU2006 license: 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Apr-2011
Hardware Availability: Feb-2011
Software Availability: Jul-2010



Hardware

CPU Name:	AMD Opteron 6166 HE
CPU Characteristics:	
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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

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Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) SP1 Kernel 2.6.32.12-0.7-default
Compiler:	x86 Open64 4.2.4 Compiler Suite (from AMD)
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multiuser)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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SPEC CFP2006 Result

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L3 Cache: 12 MB I+D on chip per chip, 6 MB shared / 6 cores
Other Cache: None
Memory: 64 GB (16 x 4 GB 2Rx8 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Other Software: None

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1335	244	1329	245	**1331**	**245**	24	**1316**	**248**	1319	247	1315	248
416.gamess	24	1652	284	**1655**	**284**	1663	283	24	1536	306	1525	308	**1526**	**308**
433.milc	24	1226	180	1226	180	**1226**	**180**	24	**1111**	**198**	1111	198	1110	198
434.zeusmp	24	851	257	**854**	**256**	854	256	24	837	261	832	263	**834**	**262**
435.gromacs	24	**750**	**228**	757	226	749	229	24	**597**	**287**	591	290	603	284
436.cactusADM	24	974	294	969	296	**970**	**296**	4	170	281	**166**	**288**	166	289
437.leslie3d	24	1268	178	**1267**	**178**	1261	179	24	**1265**	**178**	1266	178	1265	178
444.namd	24	853	226	**850**	**226**	850	226	24	797	242	**794**	**242**	793	243
447.dealII	24	712	386	**711**	**386**	710	387	24	654	420	639	430	**643**	**427**
450.soplex	24	1158	173	**1153**	**174**	1151	174	24	1096	183	**1023**	**196**	1017	197
453.povray	24	404	316	399	320	**400**	**319**	24	357	357	359	356	**358**	**357**
454.calculix	24	**591**	**335**	591	335	593	334	24	558	355	557	356	**558**	**355**
459.GemsFDTD	24	1546	165	**1550**	**164**	1558	163	24	1476	173	1462	174	**1475**	**173**
465.tonto	24	**816**	**289**	815	290	818	289	24	**743**	**318**	751	314	742	318
470.lbm	24	966	341	**966**	**341**	1010	326	24	966	341	**966**	**341**	1010	326
481.wrf	24	955	281	**955**	**281**	955	281	24	**918**	**292**	916	293	921	291
482.sphinx3	24	1425	328	**1419**	**330**	1419	330	24	1403	333	1407	333	**1403**	**333**

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.
See the configuration file for details.
```

Operating System Notes

```
'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=10800 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
```

General Notes

```
Environment variables set by runspec before the start of the run:
HUGETLB_LIMIT = "450"
LD_LIBRARY_PATH = "/usr/cpu2006/amd1002-rate-libs-revC/64:/usr/cpu2006/amd1002-rate-libs-revC/32"
OMP_NUM_THREADS = "6"

The x86 Open64 Compiler Suite is only available from (and supported by) AMD at
http://developer.amd.com/cpu/open64
Binaries were compiled on SLES10 SP2 with binutils 2.18
This result was measured on the Gateway GW2000h-GW175h F1.
The Acer AW2000h-AW175h F1 and Gateway GW2000h-GW175h F1 are electronically equivalent.
```

Base Compiler Invocation

C benchmarks:
opencc

C++ benchmarks:
openCC

Fortran benchmarks:
openf95

Benchmarks using both Fortran and C:
opencc openf95

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
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
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
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
`-march=barcelona -mso -Ofast -OPT:malloc_alg=1 -HP:bdt=2m`

C++ benchmarks:
`-march=barcelona -mso -Ofast -static -INLINE:aggressive=on -OPT:malloc_alg=1 -HP:bdt=2m`

Fortran benchmarks:
`-march=barcelona -mso -Ofast -HP`

Benchmarks using both Fortran and C:
`-march=barcelona -mso -Ofast -OPT:malloc_alg=1 -HP:bdt=2m -HP`

Peak Compiler Invocation

C benchmarks:
`opencc`

C++ benchmarks:
`openCC`

Fortran benchmarks:
`openf95`

Benchmarks using both Fortran and C:
`opencc openf95`

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 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -DSPEC_CPU_CASE_FLAG -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

433.milc: -march=barcelona -mso -Ofast -CG:movnti=1 -CG:local_sched_alg=1 -CG:locs_shallow_depth=1 -HP:bdt=2m:heap=2m -LNO:prefetch=3

470.lbm: basepeak = yes

482.sphinx3: -march=barcelona -mso -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -OPT:malloc_alg=2 -CG:sse_cse_regs=0 -CG:locs_shallow_depth=1 -CG:cmp_peep=on -CG:local_sched_alg=1 -INLINE:aggressive=on

C++ benchmarks:

444.namd: -march=barcelona -mso -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -LNO:ignore_feedback=off -CG:local_sched_alg=2 -CG:load_exe=0 -CG:compute_to=on -OPT:unroll_size=256 -fno-exceptions -HP:bdt=2m:heap=2m

447.dealII: -march=barcelona -mso -Ofast -static -INLINE:aggressive=on -LNO:opt=0 -fno-emit-exceptions -m32 -OPT:unroll_times_max=8 -OPT:unroll_size=256 -OPT:unroll_level=2 -HP:bdt=2m:heap=2m -GRA:unspill=on -CG:cmp_peep=on -TENV:frame_pointer=off

450.soplex: -march=barcelona -mso -fb_create fbdata(pass 1) -fb_opt fbdata(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 -HP:bdt=2m

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

Fortran benchmarks:

410.bwaves: -march=barcelona -mso -O3 -OPT:Ofast -OPT:treeheight=on -LNO:blocking=off -LNO:prefetch_ahead=5 -LNO:ignore_feedback=off -WOPT:aggstr=0 -HP:bdt=2m:heap=2m -CG:cmp_peep=on

416.gamess: -march=barcelona -mso -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3 -LNO:fu=6 -LNO:blocking=0 -LNO:prefetch=0 -OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256 -HP:bdt=2m:heap=2m

434.zeusmp: -march=barcelona -mso -Ofast -LNO:blocking=off -LNO:interchange=off -OPT:treeheight=on -OPT:unroll_size=256 -CG:cmp_peep=on -GRA:prioritize_by_density=on -HP

Continued on next page

Peak Optimization Flags (Continued)

437.leslie3d: -march=barcelona -mso -Ofast -HP:bdt=2m:heap=2m

459.GemsFDTD: -march=barcelona -mso -Ofast -LNO:fission=2 -LNO:prefetch_ahead=1 -CG:load_exe=0 -CG:local_sched_alg=1 -HP

465.tonto: -march=barcelona -mso -Ofast -OPT:alias=no_f90_pointer_alias -LNO:blocking=off -CG:load_exe=1 -IPA:plimit=525 -HP

Benchmarks using both Fortran and C:

435.gromacs: -march=barcelona -mso -Ofast -OPT:rsqrt=2 -HP:bdt=2m:heap=2m

436.cactusADM: -march=barcelona -mso -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast -apo -LNO:prefetch_ahead=1 -HP:bdt=2m:heap=2m -LANG:heap_allocation_threshold=100

454.calculix: -march=barcelona -mso -Ofast -CG:load_exe=0 -CG:ptr_load_use=0 -CG:local_sched_alg=2 -CG:compute_to=on -LNO:prefetch_ahead=30 -WOPT:unroll=2 -GRA:optimize_boundary=on -HP:bdt=2m:heap=2m

481.wrf: -march=barcelona -mso -Ofast -LNO:blocking=off -LNO:prefetch_ahead=10 -LANG:copyinout=off -IPA:callee_limit=5000 -GRA:prioritize_by_density=on -m3dnow -HP

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC.20100901.html
http://www.spec.org/cpu2006/flags/amd-platform-rate-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/x86-open64-424-flags-rate-revC.20100901.xml
http://www.spec.org/cpu2006/flags/amd-platform-rate-revC.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
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