SPEC® CFP2006 Result
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Acer Incorporated

SPECfp®_rate2006 = 486

Acer AR585 F1 (AMD Opteron 6132 HE)

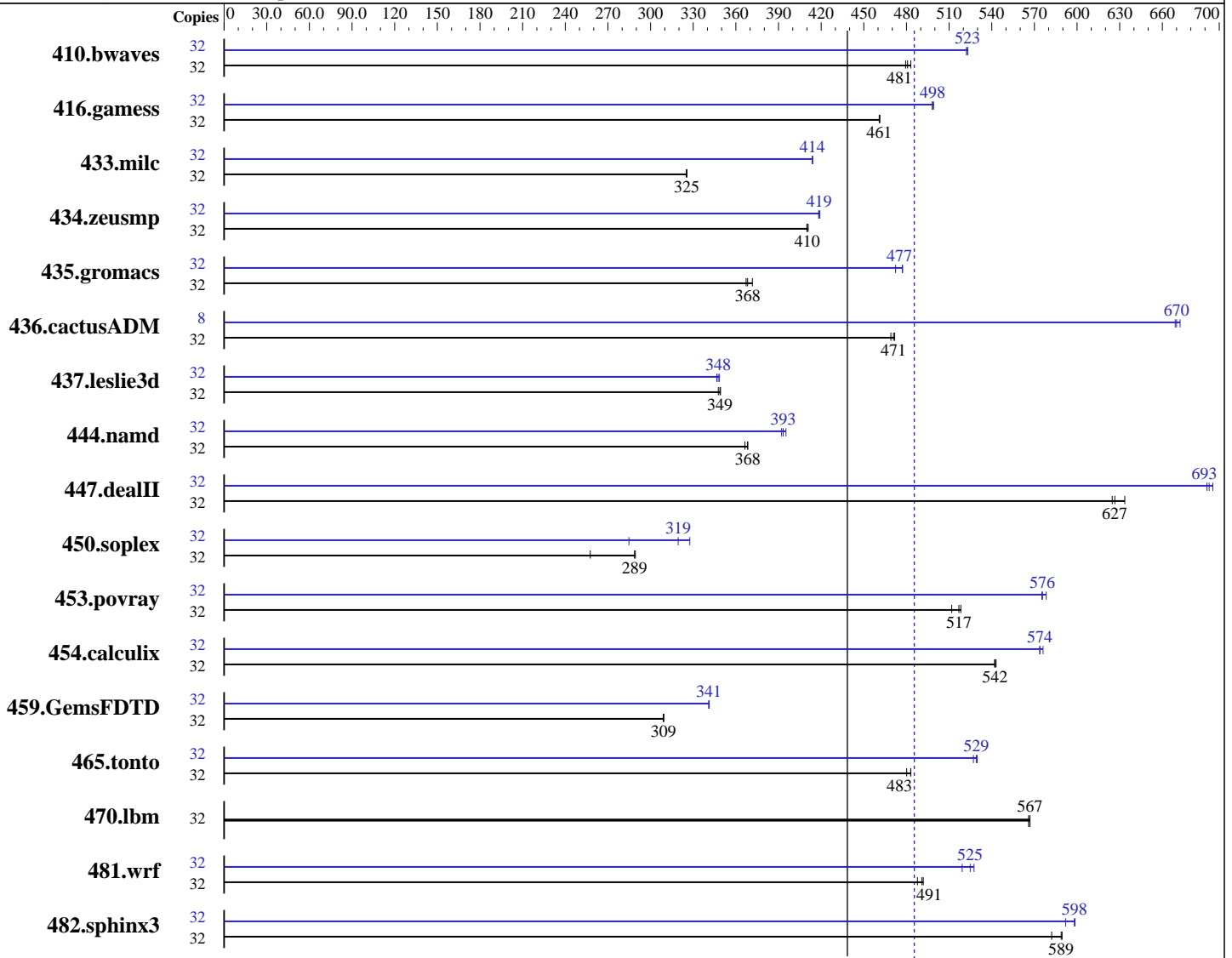SPECfp_rate_base2006 = 438

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

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

Benchmark	Copies	Result (base)	Result (peak)
410.bwaves	32 / 32	481	523
416.gamess	32 / 32	461	498
433.milc	32 / 32	325	414
434.zeusmp	32 / 32	410	419
435.gromacs	32 / 32	368	477
436.cactusADM	8 / 32	471	670
437.leslie3d	32 / 32	349	348
444.namd	32 / 32	368	393
447.dealII	32 / 32	627	693
450.soplex	32 / 32	289	319
453.povray	32 / 32	517	576
454.calculix	32 / 32	542	574
459.GemsFDTD	32 / 32	309	341
465.tonto	32 / 32	483	529
470.lbm	32	567	
481.wrf	32 / 32	491	525
482.sphinx3	32 / 32	589	598

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Hardware

CPU Name:	AMD Opteron 6132 HE
CPU Characteristics:	
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	512 KB I+D on chip per core

Continued on next page

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 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

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L3 Cache:	12 MB I+D on chip per chip, 6 MB shared / 4 cores
Other Cache:	None
Memory:	128 GB (32 x 4 GB 2Rx8 PC3-10600R-9, ECC)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	**905**	**481**	907	479	900	483	32	833	522	**832**	**523**	831	523
416.gamess	32	1358	461	1360	461	**1359**	**461**	32	1258	498	1255	499	**1257**	**498**
433.milc	32	902	326	**903**	**325**	903	325	32	710	414	710	414	**710**	**414**
434.zeusmp	32	709	411	**710**	**410**	710	410	32	**696**	**419**	695	419	696	418
435.gromacs	32	622	367	**620**	**368**	615	372	32	**479**	**477**	484	472	479	477
436.cactusADM	32	**812**	**471**	815	469	811	472	8	143	669	142	672	**143**	**670**
437.leslie3d	32	**862**	**349**	865	348	861	349	32	868	347	**866**	**348**	863	348
444.namd	32	700	366	**697**	**368**	697	368	32	654	392	**653**	**393**	649	395
447.dealII	32	578	634	586	625	**584**	**627**	32	526	696	**528**	**693**	530	691
450.soplex	32	1036	258	**925**	**289**	922	289	32	937	285	**836**	**319**	815	328
453.povray	32	333	512	**329**	**517**	328	518	32	296	575	294	578	**296**	**576**
454.calculix	32	486	543	487	542	**487**	**542**	32	**460**	**574**	458	576	460	574
459.GemsFDTD	32	**1098**	**309**	1098	309	1099	309	32	995	341	**996**	**341**	996	341
465.tonto	32	656	480	**652**	**483**	652	483	32	**595**	**529**	594	530	597	527
470.lbm	32	777	566	776	567	**776**	**567**	32	777	566	776	567	**776**	**567**
481.wrf	32	733	488	**728**	**491**	727	492	32	688	519	678	528	**681**	**525**
482.sphinx3	32	1071	582	**1059**	**589**	1058	589	32	1054	592	**1043**	**598**	1042	599

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=28672 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_LIMIT = "896"
LD_LIBRARY_PATH = "/usr/cpu2006/amd1002-rate-libs-revC/64:/usr/cpu2006/amd1002-rate-libs-revC/32"
OMP_NUM_THREADS = "4"

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 GR585 F1.
The Acer AR585 F1 and Gateway GR585 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
```

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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
```

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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
```

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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.

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