



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Acer Incorporated

SPECfp<sup>®</sup>\_rate2006 = 313

Acer AW2000h-AW175h F1 (AMD Opteron 6176)

SPECfp\_rate\_base2006 = 294

CPU2006 license: 97

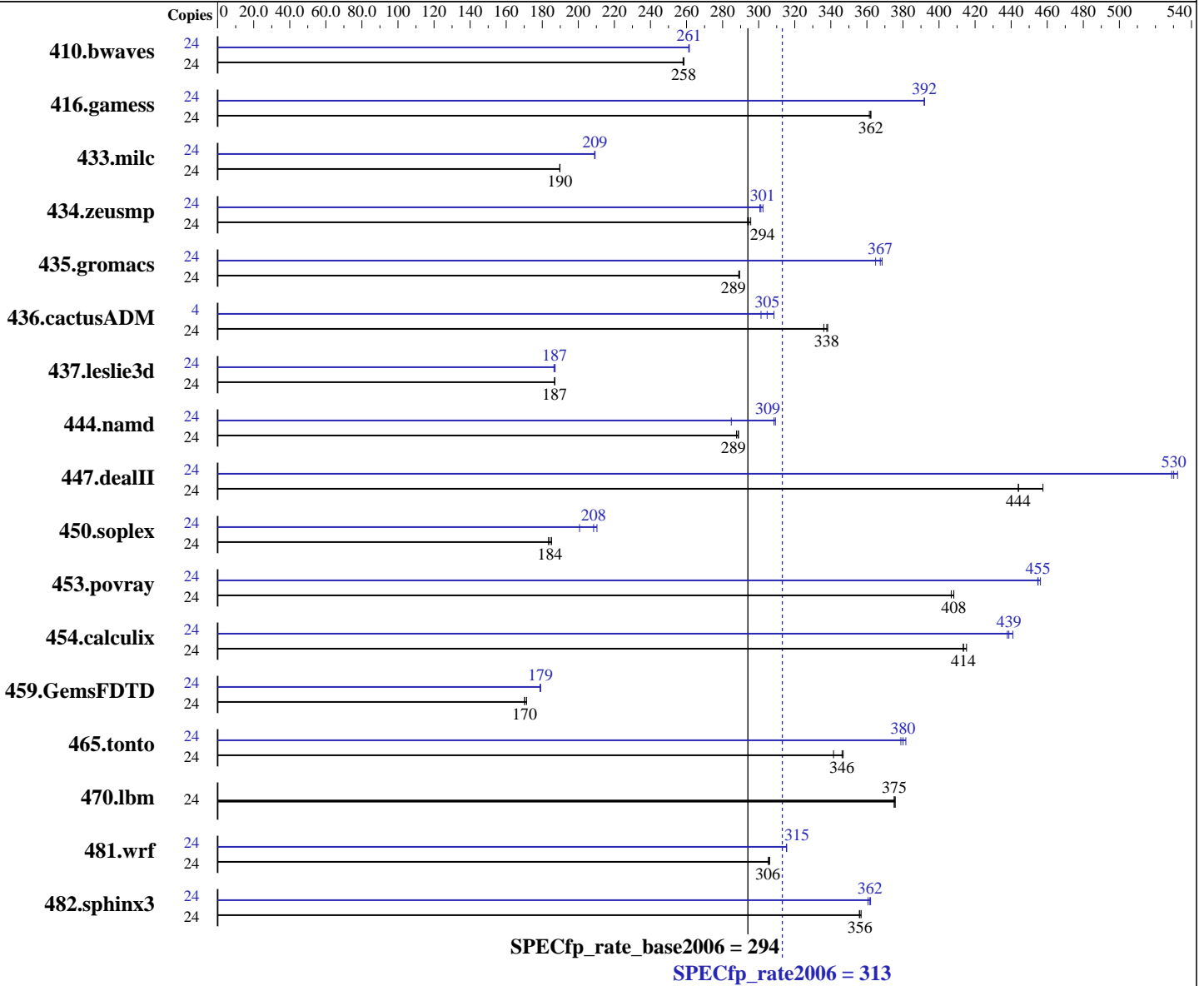
Test date: May-2011

Test sponsor: Acer Incorporated

Hardware Availability: Feb-2011

Tested by: Acer Incorporated

Software Availability: Jul-2010



### Hardware

CPU Name: AMD Opteron 6176  
 CPU Characteristics:  
 CPU MHz: 2300  
 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

### 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Acer Incorporated

SPECfp\_rate2006 = 313

Acer AW2000h-AW175h F1 (AMD Opteron 6176)

SPECfp\_rate\_base2006 = 294

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

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

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

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1264	258	<u>1262</u>	<u>258</u>	1261	259	24	1247	262	<u>1248</u>	<u>261</u>	1248	261
416.gamess	24	<u>1298</u>	<u>362</u>	1300	361	1297	362	24	1199	392	1199	392	<u>1199</u>	<u>392</u>
433.milc	24	1162	190	1161	190	<u>1161</u>	<u>190</u>	24	1054	209	<u>1053</u>	<u>209</u>	1053	209
434.zeusmp	24	739	296	<u>742</u>	<u>294</u>	743	294	24	722	302	<u>725</u>	<u>301</u>	726	301
435.gromacs	24	593	289	<u>592</u>	<u>289</u>	592	289	24	470	365	<u>466</u>	<u>367</u>	465	368
436.cactusADM	24	848	338	<u>849</u>	<u>338</u>	853	336	4	155	309	<u>157</u>	<u>305</u>	159	301
437.leslie3d	24	<u>1207</u>	<u>187</u>	1207	187	1207	187	24	1205	187	<u>1207</u>	<u>187</u>	1210	187
444.namd	24	669	288	<u>667</u>	<u>289</u>	666	289	24	<u>624</u>	<u>309</u>	676	285	622	309
447.dealII	24	618	444	600	458	<u>618</u>	<u>444</u>	24	519	529	516	532	<u>518</u>	<u>530</u>
450.soplex	24	1092	183	1081	185	<u>1086</u>	<u>184</u>	24	997	201	<u>960</u>	<u>208</u>	952	210
453.povray	24	<u>313</u>	<u>408</u>	313	408	314	407	24	<u>281</u>	<u>455</u>	280	456	281	455
454.calculix	24	477	415	<u>479</u>	<u>414</u>	479	413	24	<u>451</u>	<u>439</u>	452	438	449	441
459.GemsFDTD	24	1486	171	1496	170	<u>1495</u>	<u>170</u>	24	1424	179	<u>1423</u>	<u>179</u>	1422	179
465.tonto	24	692	342	681	347	<u>682</u>	<u>346</u>	24	<u>621</u>	<u>380</u>	619	382	623	379
470.lbm	24	878	376	<u>879</u>	<u>375</u>	879	375	24	878	376	<u>879</u>	<u>375</u>	879	375
481.wrf	24	876	306	878	305	<u>877</u>	<u>306</u>	24	<u>850</u>	<u>315</u>	850	315	849	316
482.sphinx3	24	<u>1314</u>	<u>356</u>	1315	356	1311	357	24	1292	362	1297	361	<u>1293</u>	<u>362</u>

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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECfp\_rate2006 = 313**

**Acer AW2000h-AW175h F1 (AMD Opteron 6176)**

**SPECfp\_rate\_base2006 = 294**

**CPU2006 license:** 97

**Test date:** May-2011

**Test sponsor:** Acer Incorporated

**Hardware Availability:** Feb-2011

**Tested by:** Acer Incorporated

**Software Availability:** Jul-2010

## 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:

openc

C++ benchmarks:

openCC

Fortran benchmarks:

openf95

Benchmarks using both Fortran and C:

openc 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECfp\_rate2006 = 313**

**Acer AW2000h-AW175h F1 (AMD Opteron 6176)**

**SPECfp\_rate\_base2006 = 294**

**CPU2006 license:** 97

**Test date:** May-2011

**Test sponsor:** Acer Incorporated

**Hardware Availability:** Feb-2011

**Tested by:** Acer Incorporated

**Software Availability:** Jul-2010

## 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`



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECfp\_rate2006 = 313**

**Acer AW2000h-AW175h F1 (AMD Opteron 6176)**

**SPECfp\_rate\_base2006 = 294**

**CPU2006 license:** 97

**Test date:** May-2011

**Test sponsor:** Acer Incorporated

**Hardware Availability:** Feb-2011

**Tested by:** Acer Incorporated

**Software Availability:** Jul-2010

## 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.dealll: -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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**Acer Incorporated**

**SPECfp\_rate2006 = 313**

**Acer AW2000h-AW175h F1 (AMD Opteron 6176)**

**SPECfp\_rate\_base2006 = 294**

**CPU2006 license:** 97

**Test date:** May-2011

**Test sponsor:** Acer Incorporated

**Hardware Availability:** Feb-2011

**Tested by:** Acer Incorporated

**Software Availability:** Jul-2010

## 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>

SPEC and SPECfp 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 21:59:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 5 July 2011.