



# SPEC<sup>®</sup> CFP2006 Result

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## Acer Incorporated

## SPECfp<sup>®</sup>\_rate2006 = 199

## Gateway GT350 F1 (Intel Xeon X5570)

## SPECfp\_rate\_base2006 = 193

CPU2006 license: 97

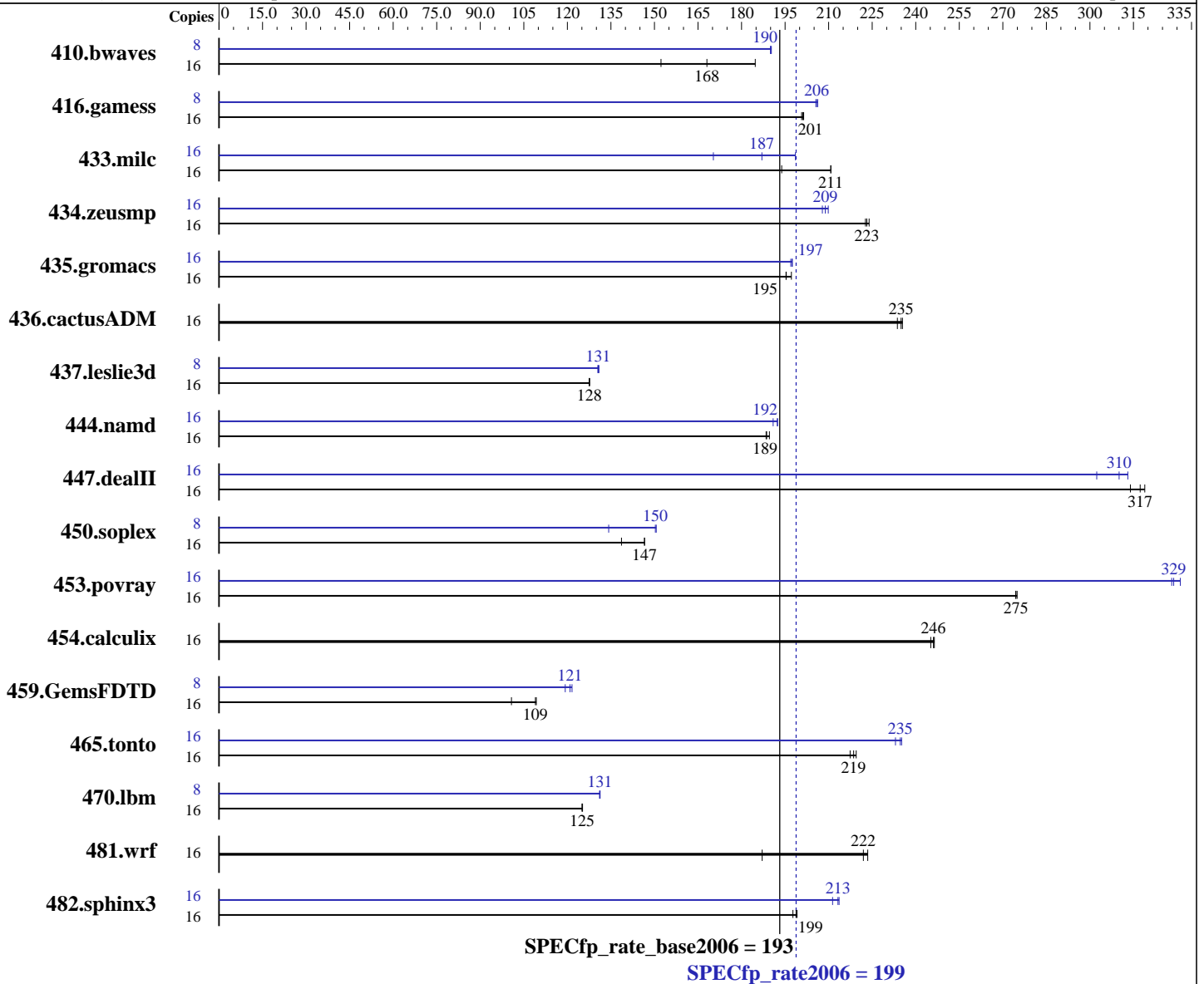
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Jan-2010

Hardware Availability: Jan-2010

Software Availability: Sep-2009



### Hardware

CPU Name: Intel Xeon X5570  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz  
 CPU MHz: 2933  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1, 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64)  
 Kernel 2.6.27.19-5  
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1  
 Build 20091012 Package ID: l\_cproc\_p\_11.1.059, l\_cprof\_p\_11.1.059  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 24 GB (6 x 4GB DDR3-1333 RDIMM)  
Disk Subsystem: 1 x 500 GB SATA II, 7200 RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

| Benchmark     | Base   |             |            |             |            |             |            | Peak   |            |            |            |            |             |            |
|---------------|--------|-------------|------------|-------------|------------|-------------|------------|--------|------------|------------|------------|------------|-------------|------------|
|               | Copies | Seconds     | Ratio      | Seconds     | Ratio      | Seconds     | Ratio      | Copies | Seconds    | Ratio      | Seconds    | Ratio      | Seconds     | Ratio      |
| 410.bwaves    | 16     | 1428        | 152        | 1177        | 185        | <u>1294</u> | <u>168</u> | 8      | <u>572</u> | <u>190</u> | 571        | 190        | 572         | 190        |
| 416.gamess    | 16     | <u>1558</u> | <u>201</u> | 1555        | 201        | 1561        | 201        | 8      | 762        | 206        | 760        | 206        | <u>761</u>  | <u>206</u> |
| 433.milc      | 16     | 758         | 194        | 697         | 211        | <u>697</u>  | <u>211</u> | 16     | 740        | 199        | <u>785</u> | <u>187</u> | 863         | 170        |
| 434.zeusmp    | 16     | <u>652</u>  | <u>223</u> | 654         | 223        | 650         | 224        | 16     | 694        | 210        | 701        | 208        | <u>697</u>  | <u>209</u> |
| 435.gromacs   | 16     | 579         | 197        | 585         | 195        | <u>585</u>  | <u>195</u> | 16     | 579        | 197        | <u>579</u> | <u>197</u> | 580         | 197        |
| 436.cactusADM | 16     | 818         | 234        | 812         | 235        | <u>814</u>  | <u>235</u> | 16     | 818        | 234        | 812        | 235        | <u>814</u>  | <u>235</u> |
| 437.leslie3d  | 16     | 1178        | 128        | 1179        | 128        | <u>1179</u> | <u>128</u> | 8      | 575        | 131        | 576        | 130        | <u>576</u>  | <u>131</u> |
| 444.namd      | 16     | <u>680</u>  | <u>189</u> | 677         | 190        | 681         | 188        | 16     | 672        | 191        | <u>667</u> | <u>192</u> | 667         | 192        |
| 447.dealII    | 16     | 583         | 314        | <u>577</u>  | <u>317</u> | 574         | 319        | 16     | 585        | 313        | <u>590</u> | <u>310</u> | 605         | 302        |
| 450.soplex    | 16     | 962         | 139        | <u>911</u>  | <u>147</u> | 910         | 147        | 8      | 497        | 134        | <u>444</u> | <u>150</u> | 443         | 151        |
| 453.povray    | 16     | <u>310</u>  | <u>275</u> | 310         | 275        | 310         | 274        | 16     | <u>259</u> | <u>329</u> | 259        | 328        | 257         | 331        |
| 454.calculix  | 16     | 536         | 246        | <u>536</u>  | <u>246</u> | 538         | 245        | 16     | 536        | 246        | <u>536</u> | <u>246</u> | 538         | 245        |
| 459.GemsFDTD  | 16     | 1685        | 101        | <u>1558</u> | <u>109</u> | 1553        | 109        | 8      | 712        | 119        | <u>702</u> | <u>121</u> | 698         | 122        |
| 465.tonto     | 16     | 724         | 217        | <u>720</u>  | <u>219</u> | 717         | 219        | 16     | 676        | 233        | <u>671</u> | <u>235</u> | 670         | 235        |
| 470.lbm       | 16     | 1758        | 125        | 1755        | 125        | <u>1757</u> | <u>125</u> | 8      | <u>837</u> | <u>131</u> | 837        | 131        | 839         | 131        |
| 481.wrf       | 16     | 955         | 187        | <u>805</u>  | <u>222</u> | 800         | 223        | 16     | 955        | 187        | <u>805</u> | <u>222</u> | 800         | 223        |
| 482.sphinx3   | 16     | 1577        | 198        | 1566        | 199        | <u>1569</u> | <u>199</u> | 16     | 1475       | 211        | 1460       | 214        | <u>1463</u> | <u>213</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

## Operating System Notes

'ulimit -s unlimited' was set for stacksize unlimited

## Base Compiler Invocation

C benchmarks:  
icc -m64

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## Base Compiler Invocation (Continued)

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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 -nofor\_main  
 436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
 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 -nofor\_main  
 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:

-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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 -nofor\_main  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.dealII: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
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

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -opt-prefetch

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3 -ansi-alias -auto-ilp32

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias -scalar-rep-

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)

437.leslie3d: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -auto -inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

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## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revE.20100202.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revE.20100202.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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