



# SPEC® CFP2006 Result

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## Acer Incorporated

SPECfp®\_rate2006 = 32.3

## Acer Altos R520 (Intel Xeon 5120)

SPECfp\_rate\_base2006 = 30.3

CPU2006 license: 97

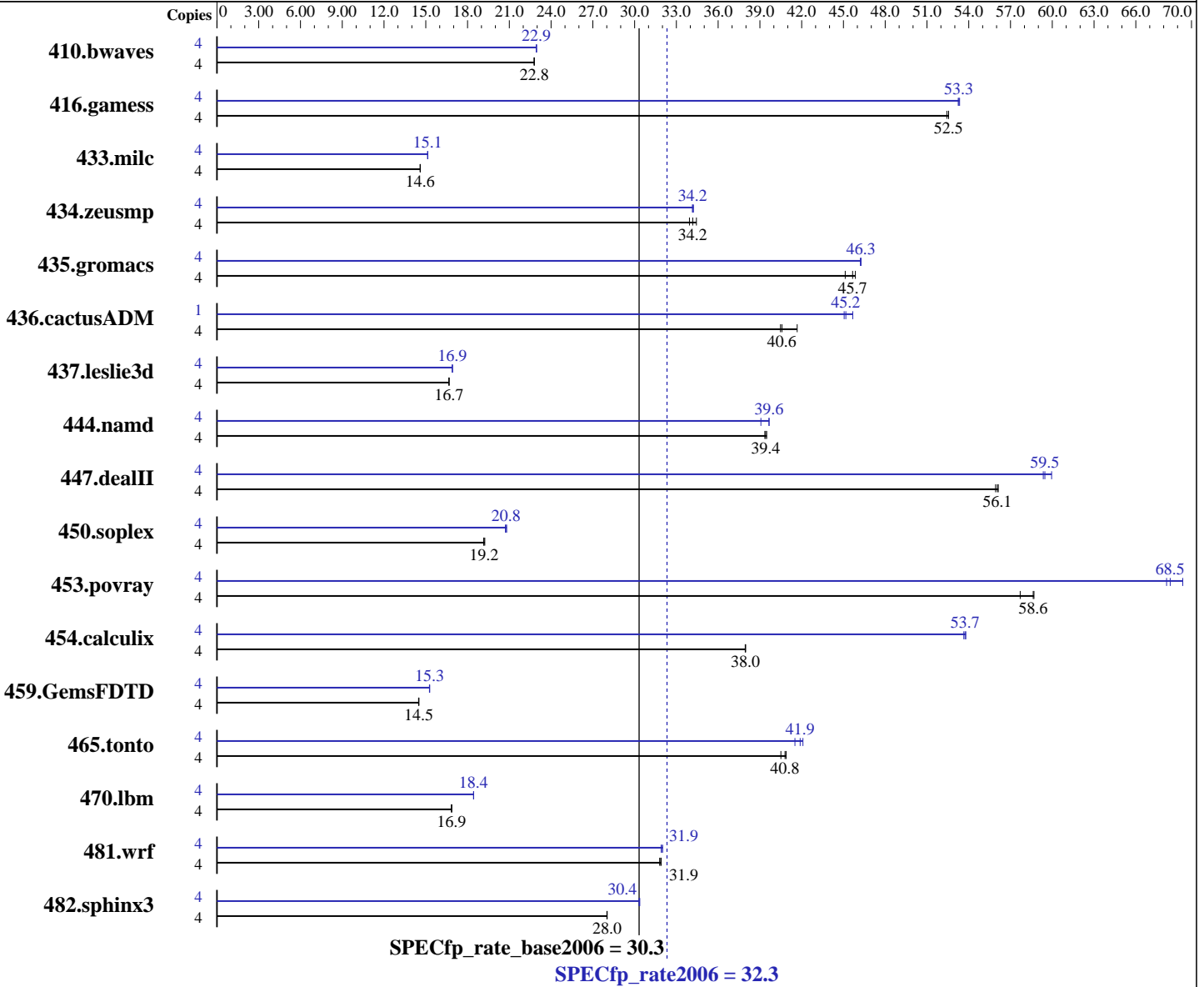
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Nov-2007

Hardware Availability: Nov-2006

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon 5120  
 CPU Characteristics: 1066MHz system bus  
 CPU MHz: 1860  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1, 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 4 MB I+D on chip per chip

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### Software

Operating System: SuSE Linux Enterprise Server 10 SP1 EM64T (kernel 2.6.16.46-0.12-smp)  
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, level 3  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8 x 2048MB ECC FB-DIMM DDR2-667 CL5-5-5)  
Disk Subsystem: 1 x 73GB 10000PRM SAS HDD  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: MicroQuill SmartHeap Library 8.1

## Results Table

| Benchmark     | Base   |             |             |             |             |             |             | Peak   |             |             |             |             |             |             |
|---------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
|               | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       |
| 410.bwaves    | 4      | 2385        | 22.8        | <u>2385</u> | <u>22.8</u> | 2385        | 22.8        | 4      | 2370        | 22.9        | 2368        | 23.0        | <u>2369</u> | <u>22.9</u> |
| 416.gamess    | 4      | <u>1490</u> | <u>52.5</u> | 1494        | 52.4        | 1490        | 52.6        | 4      | <u>1470</u> | <u>53.3</u> | 1468        | 53.3        | 1471        | 53.2        |
| 433.milc      | 4      | <u>2515</u> | <u>14.6</u> | 2515        | 14.6        | 2515        | 14.6        | 4      | 2425        | 15.1        | 2426        | 15.1        | <u>2425</u> | <u>15.1</u> |
| 434.zeusmp    | 4      | 1057        | 34.4        | 1073        | 33.9        | <u>1065</u> | <u>34.2</u> | 4      | 1063        | 34.2        | <u>1065</u> | <u>34.2</u> | 1066        | 34.2        |
| 435.gromacs   | 4      | 623         | 45.9        | 633         | 45.1        | <u>626</u>  | <u>45.7</u> | 4      | 617         | 46.3        | 618         | 46.2        | <u>617</u>  | <u>46.3</u> |
| 436.cactusADM | 4      | 1181        | 40.5        | 1147        | 41.7        | <u>1178</u> | <u>40.6</u> | 1      | 265         | 45.1        | <u>265</u>  | <u>45.2</u> | 262         | 45.7        |
| 437.leslie3d  | 4      | <u>2256</u> | <u>16.7</u> | 2257        | 16.7        | 2255        | 16.7        | 4      | <u>2224</u> | <u>16.9</u> | 2224        | 16.9        | 2223        | 16.9        |
| 444.namd      | 4      | 812         | 39.5        | 815         | 39.4        | <u>814</u>  | <u>39.4</u> | 4      | <u>809</u>  | <u>39.6</u> | 821         | 39.1        | 809         | 39.7        |
| 447.dealII    | 4      | 818         | 55.9        | 815         | 56.1        | <u>816</u>  | <u>56.1</u> | 4      | 763         | 60.0        | <u>769</u>  | <u>59.5</u> | 771         | 59.4        |
| 450.soplex    | 4      | 1741        | 19.2        | <u>1739</u> | <u>19.2</u> | 1734        | 19.2        | 4      | <u>1607</u> | <u>20.8</u> | 1603        | 20.8        | 1610        | 20.7        |
| 453.povray    | 4      | <u>363</u>  | <u>58.6</u> | 363         | 58.7        | 369         | 57.7        | 4      | 307         | 69.4        | <u>311</u>  | <u>68.5</u> | 312         | 68.2        |
| 454.calculix  | 4      | 870         | 37.9        | 869         | 38.0        | <u>869</u>  | <u>38.0</u> | 4      | 615         | 53.6        | 613         | 53.8        | <u>614</u>  | <u>53.7</u> |
| 459.GemsFDTD  | 4      | 2925        | 14.5        | 2931        | 14.5        | <u>2929</u> | <u>14.5</u> | 4      | 2777        | 15.3        | 2781        | 15.3        | <u>2778</u> | <u>15.3</u> |
| 465.tonto     | 4      | 963         | 40.9        | <u>965</u>  | <u>40.8</u> | 972         | 40.5        | 4      | <u>940</u>  | <u>41.9</u> | 935         | 42.1        | 948         | 41.5        |
| 470.lbm       | 4      | 3261        | 16.9        | <u>3261</u> | <u>16.9</u> | 3261        | 16.9        | 4      | 2981        | 18.4        | 2981        | 18.4        | <u>2981</u> | <u>18.4</u> |
| 481.wrf       | 4      | 1400        | 31.9        | <u>1402</u> | <u>31.9</u> | 1405        | 31.8        | 4      | <u>1399</u> | <u>31.9</u> | 1396        | 32.0        | 1400        | 31.9        |
| 482.sphinx3   | 4      | <u>2782</u> | <u>28.0</u> | 2781        | 28.0        | 2783        | 28.0        | 4      | <u>2568</u> | <u>30.4</u> | 2567        | 30.4        | 2571        | 30.3        |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## General Notes

This result was measured on the Acer Altos R520.  
The Altos R720 and Altos R520 are electronically equivalent.

### BIOS Settings

Hardware Prefetcher set to ON

Adjacent Cache Line Prefetch set to ON

Optimization for high-frequency FSB applications set to ON

All results used taskset to bind processes to cores.



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CPU2006 license: 97

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Tested by: Acer Incorporated

Test date: Nov-2007

Hardware Availability: Nov-2006

Software Availability: Nov-2007

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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**Software Availability:** Nov-2007

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Benchmarks using both Fortran and C:

icc ifort

## 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
444.namd: -DSPEC_CPU_LP64
447.deallI: -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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

## Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32
```

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## Peak Optimization Flags (Continued)

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32



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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.17.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.17.xml>

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

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