



# SPEC® CFP2006 Result

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## Acer Incorporated

## SPECfp®\_rate2006 = 44.3

## Acer Altos R520 (Intel Xeon X5460)

## SPECfp\_rate\_base2006 = 41.2

CPU2006 license: 97

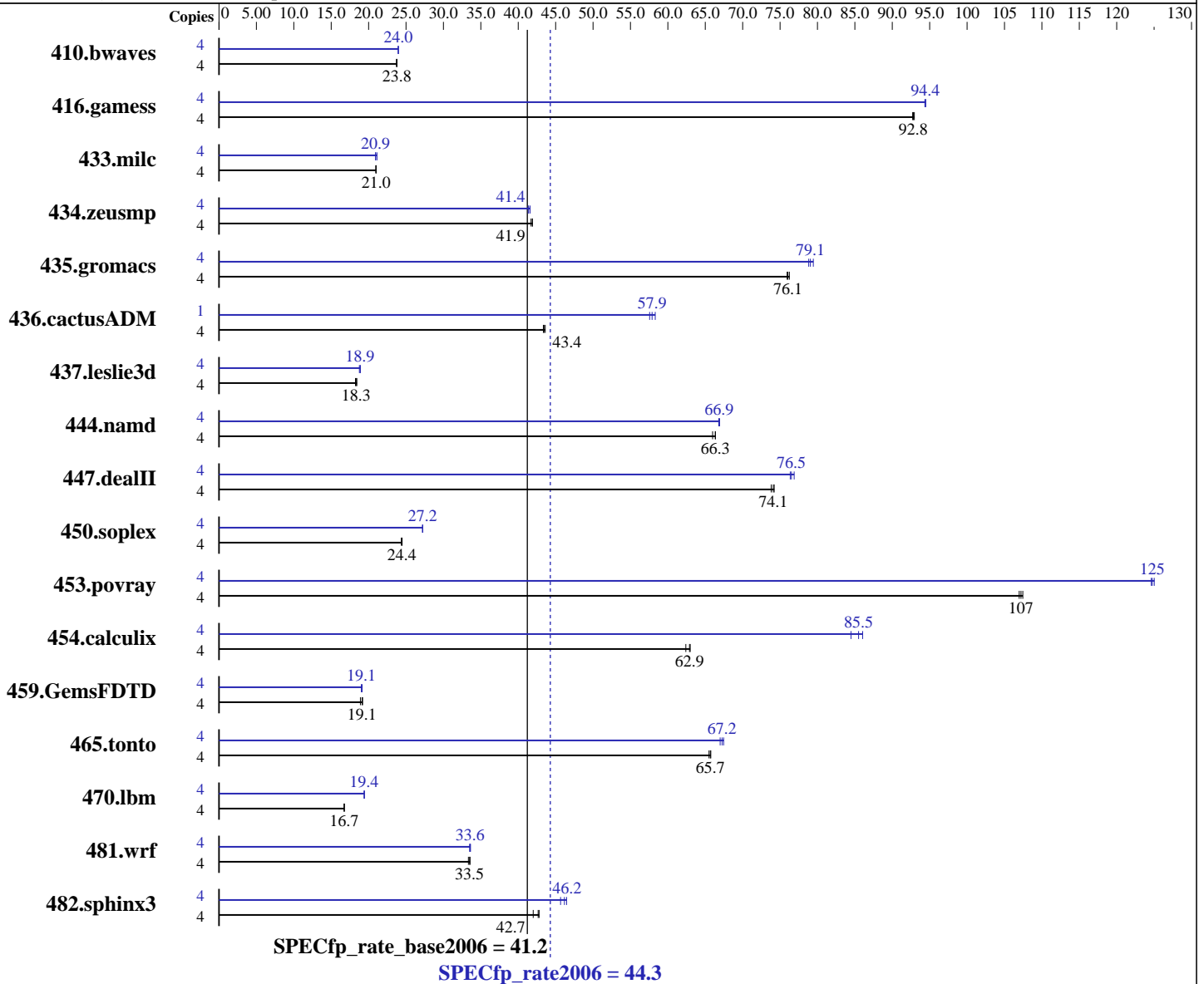
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Mar-2008

Hardware Availability: Nov-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon X5460  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 3160  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1, 2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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### Software

Operating System: SuSE Linux Enterprise Server 10 SP1 (x86\_64)  
 Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux  
 Build 20070913 Package ID: l\_cc\_p\_10.1.008,  
 l\_fc\_p\_10.1.008  
 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 10K RPM SAS HDD  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.17.50.0.15

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2286	23.8	2292	23.7	<b><u>2287</u></b>	<b><u>23.8</u></b>	4	2268	24.0	<b><u>2268</u></b>	<b><u>24.0</u></b>	2268	24.0
416.gamess	4	<b><u>844</u></b>	<b><u>92.8</u></b>	843	92.9	845	92.7	4	830	94.4	829	94.5	<b><u>829</u></b>	<b><u>94.4</u></b>
433.milc	4	1751	21.0	<b><u>1749</u></b>	<b><u>21.0</u></b>	1748	21.0	4	1739	21.1	1754	20.9	<b><u>1754</u></b>	<b><u>20.9</u></b>
434.zeusmp	4	873	41.7	869	41.9	<b><u>869</u></b>	<b><u>41.9</u></b>	4	<b><u>879</u></b>	<b><u>41.4</u></b>	881	41.3	875	41.6
435.gromacs	4	376	75.9	<b><u>376</u></b>	<b><u>76.1</u></b>	375	76.2	4	359	79.4	<b><u>361</u></b>	<b><u>79.1</u></b>	362	78.8
436.cactusADM	4	1103	43.4	<b><u>1100</u></b>	<b><u>43.4</u></b>	1096	43.6	1	208	57.6	<b><u>206</u></b>	<b><u>57.9</u></b>	205	58.3
437.leslie3d	4	<b><u>2051</u></b>	<b><u>18.3</u></b>	2061	18.2	2040	18.4	4	<b><u>1994</u></b>	<b><u>18.9</u></b>	2004	18.8	1990	18.9
444.namd	4	486	66.0	<b><u>484</u></b>	<b><u>66.3</u></b>	483	66.4	4	480	66.8	479	66.9	<b><u>480</u></b>	<b><u>66.9</u></b>
447.dealII	4	<b><u>618</u></b>	<b><u>74.1</u></b>	617	74.2	620	73.8	4	<b><u>598</u></b>	<b><u>76.5</u></b>	599	76.4	595	76.9
450.soplex	4	<b><u>1365</u></b>	<b><u>24.4</u></b>	1363	24.5	1369	24.4	4	<b><u>1225</u></b>	<b><u>27.2</u></b>	1226	27.2	1225	27.2
453.povray	4	<b><u>198</u></b>	<b><u>107</u></b>	198	107	199	107	4	<b><u>171</u></b>	<b><u>125</u></b>	171	125	170	125
454.calculix	4	529	62.4	<b><u>525</u></b>	<b><u>62.9</u></b>	524	63.0	4	384	86.0	391	84.5	<b><u>386</u></b>	<b><u>85.5</u></b>
459.GemsFDTD	4	<b><u>2220</u></b>	<b><u>19.1</u></b>	2210	19.2	2245	18.9	4	2229	19.0	<b><u>2228</u></b>	<b><u>19.1</u></b>	2218	19.1
465.tonto	4	<b><u>599</u></b>	<b><u>65.7</u></b>	599	65.7	601	65.5	4	583	67.5	<b><u>585</u></b>	<b><u>67.2</u></b>	588	67.0
470.lbm	4	3284	16.7	<b><u>3283</u></b>	<b><u>16.7</u></b>	3283	16.7	4	2831	19.4	<b><u>2830</u></b>	<b><u>19.4</u></b>	2830	19.4
481.wrf	4	1340	33.3	1331	33.6	<b><u>1334</u></b>	<b><u>33.5</u></b>	4	1334	33.5	1329	33.6	<b><u>1331</u></b>	<b><u>33.6</u></b>
482.sphinx3	4	1822	42.8	<b><u>1828</u></b>	<b><u>42.7</u></b>	1856	42.0	4	<b><u>1688</u></b>	<b><u>46.2</u></b>	1678	46.5	1707	45.7

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.

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex  
470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode

### BIOS Settings

Hardware Prefetcher set to OFF

Adjacent Cache Line Prefetch set to OFF

All results but peak 436.cactusADM used taskset to bind  
processes to cores.

"ulimit -s unlimited" was set for stacksize unlimited

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Hardware Availability: Nov-2007

Software Availability: Nov-2007

## General Notes (Continued)

OMP\_NUM\_THREADS set to number of cores

## 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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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.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
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```



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## Peak Optimization Flags

### C benchmarks:

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

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

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## Peak Optimization Flags (Continued)

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

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.xml>

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

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