



SPEC[®] CFP2006 Result

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Acer Incorporated

SPECfp[®]_rate2006 = 52.3

Acer Altos R920 (Intel Xeon E7320)

SPECfp_rate_base2006 = 48.8

CPU2006 license: 97

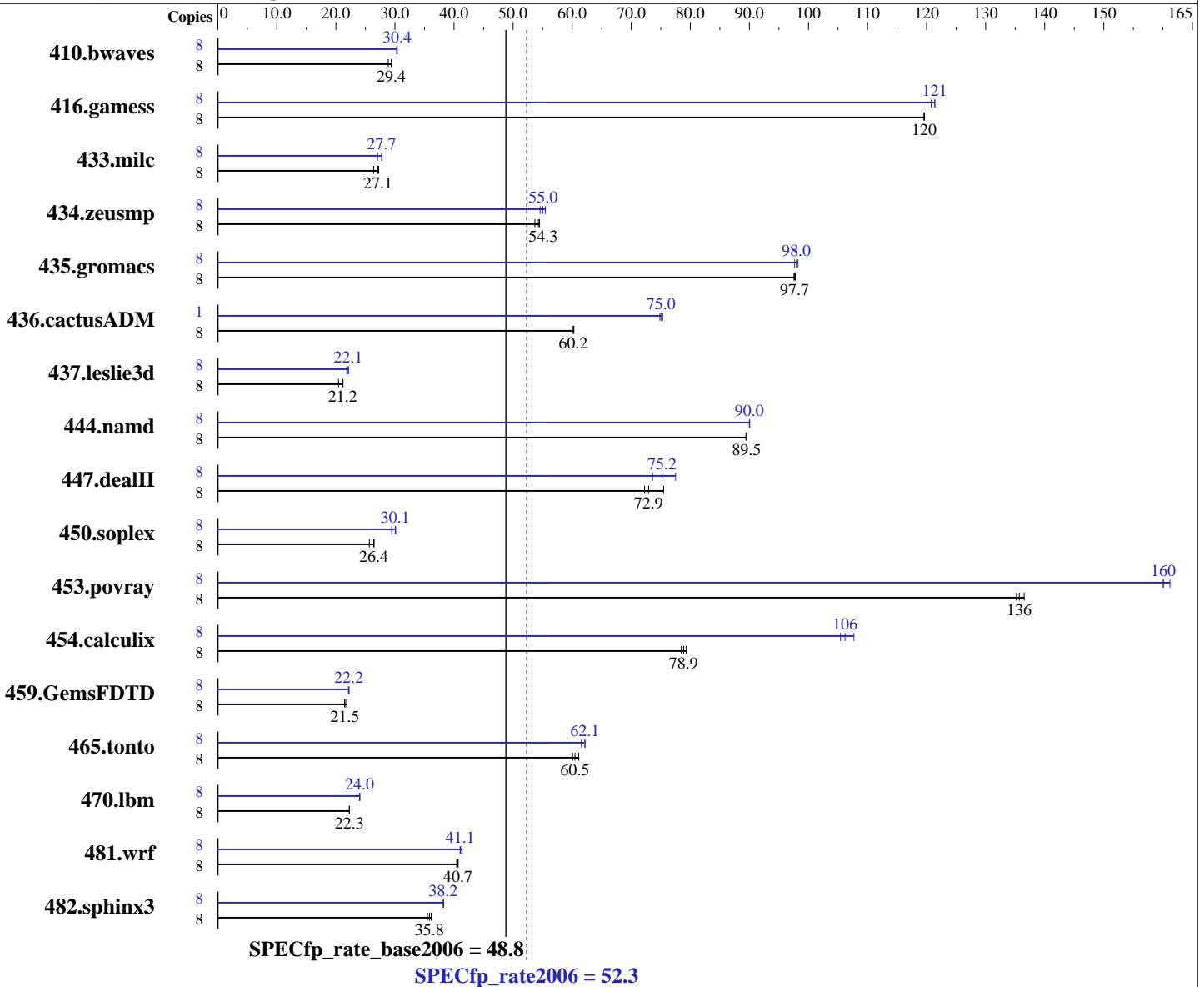
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Oct-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E7320
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 2130
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1, 2, 3, 4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per chip, 2 MB shared / 2 cores

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 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 (16 x 1048MB 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: 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	8	3767	28.9	<u>3701</u>	<u>29.4</u>	3688	29.5	8	3591	30.3	3579	30.4	<u>3582</u>	<u>30.4</u>
416.gamess	8	1309	120	<u>1310</u>	<u>120</u>	1310	120	8	1290	121	1297	121	<u>1290</u>	<u>121</u>
433.milc	8	2784	26.4	2696	27.2	<u>2709</u>	<u>27.1</u>	8	2714	27.1	2641	27.8	<u>2648</u>	<u>27.7</u>
434.zeusmp	8	1356	53.7	1336	54.5	<u>1341</u>	<u>54.3</u>	8	1334	54.6	<u>1323</u>	<u>55.0</u>	1313	55.4
435.gromacs	8	<u>585</u>	<u>97.7</u>	586	97.6	584	97.8	8	585	97.7	<u>583</u>	<u>98.0</u>	581	98.2
436.cactusADM	8	1592	60.0	<u>1588</u>	<u>60.2</u>	1585	60.3	1	<u>159</u>	<u>75.0</u>	160	74.8	159	75.3
437.leslie3d	8	3679	20.4	3546	21.2	<u>3555</u>	<u>21.2</u>	8	3443	21.8	3397	22.1	<u>3406</u>	<u>22.1</u>
444.namd	8	716	89.6	718	89.4	<u>717</u>	<u>89.5</u>	8	712	90.1	<u>713</u>	<u>90.0</u>	713	90.0
447.dealII	8	1212	75.5	<u>1255</u>	<u>72.9</u>	1266	72.3	8	<u>1217</u>	<u>75.2</u>	1243	73.6	1181	77.5
450.soplex	8	2600	25.7	<u>2526</u>	<u>26.4</u>	2521	26.5	8	2265	29.5	<u>2220</u>	<u>30.1</u>	2214	30.1
453.povray	8	<u>314</u>	<u>136</u>	312	137	315	135	8	266	160	<u>266</u>	<u>160</u>	264	161
454.calculix	8	<u>837</u>	<u>78.9</u>	833	79.3	841	78.5	8	<u>622</u>	<u>106</u>	613	108	626	105
459.GemsFDTD	8	3890	21.8	3949	21.5	<u>3944</u>	<u>21.5</u>	8	3838	22.1	3819	22.2	<u>3826</u>	<u>22.2</u>
465.tonto	8	1288	61.1	<u>1302</u>	<u>60.5</u>	1310	60.1	8	1266	62.2	1279	61.6	<u>1267</u>	<u>62.1</u>
470.lbm	8	4927	22.3	4935	22.3	<u>4932</u>	<u>22.3</u>	8	4572	24.0	4579	24.0	<u>4572</u>	<u>24.0</u>
481.wrf	8	2209	40.4	<u>2198</u>	<u>40.7</u>	2196	40.7	8	<u>2176</u>	<u>41.1</u>	2164	41.3	2178	41.0
482.sphinx3	8	4315	36.1	4392	35.5	<u>4351</u>	<u>35.8</u>	8	4085	38.2	4079	38.2	<u>4084</u>	<u>38.2</u>

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

General Notes

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

OMP_NUM_THREADS set to number of cores



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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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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.20090713.00.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.20090713.00.xml>

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