



SPEC[®] CFP2006 Result

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Acer Incorporated

SPECfp[®]_rate2006 = 89.4

Acer Altos R920 (Intel Xeon E7220)

SPECfp_rate_base2006 = 81.3

CPU2006 license: 97

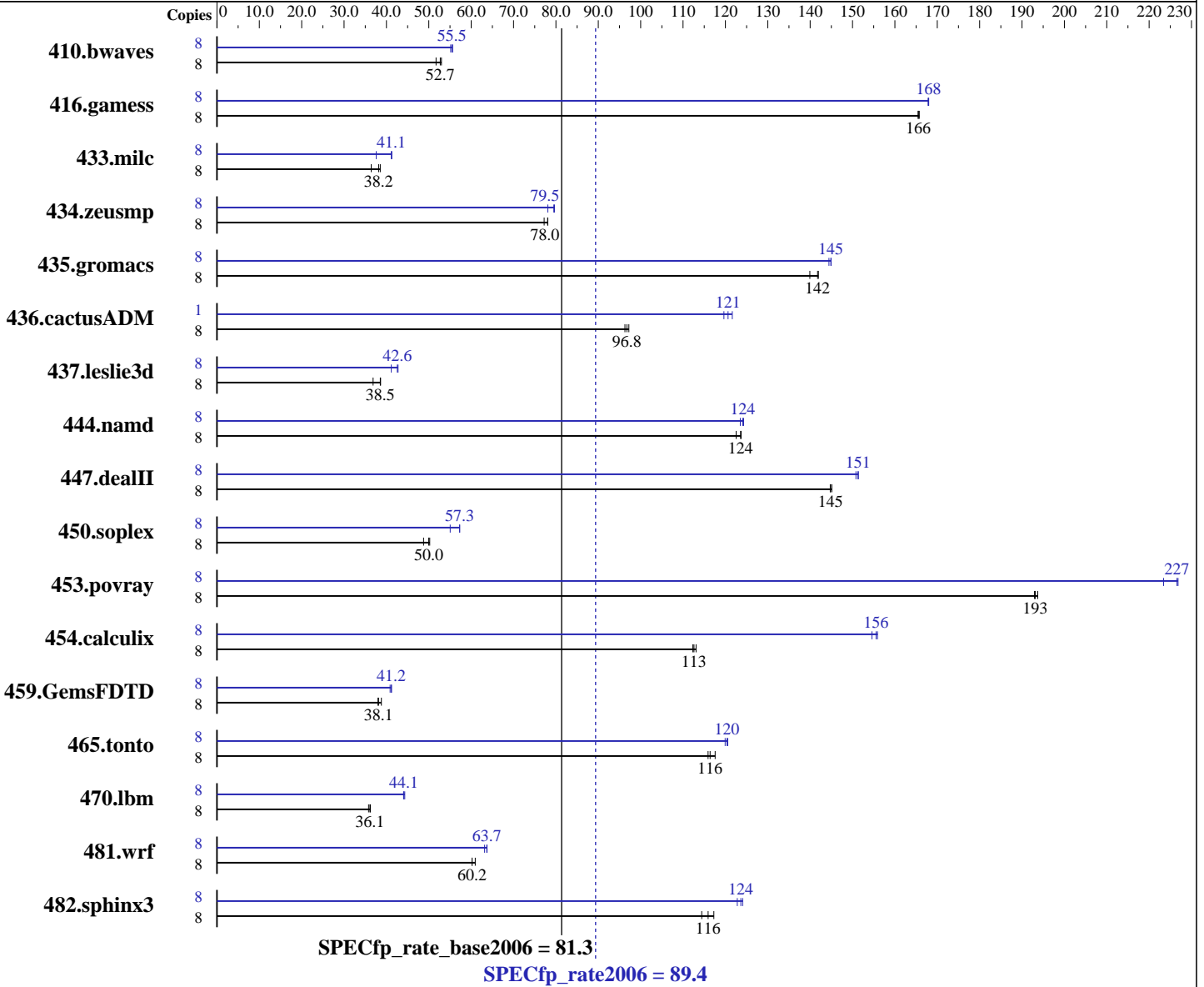
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Jan-2008

Hardware Availability: Nov-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E7220
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 2930
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 1, 2, 4 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per core

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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 (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	2102	51.7	<u>2063</u>	<u>52.7</u>	2052	53.0	8	1971	55.2	<u>1960</u>	<u>55.5</u>	1955	55.6
416.gamess	8	945	166	947	165	<u>946</u>	<u>166</u>	8	<u>933</u>	<u>168</u>	933	168	932	168
433.milc	8	2017	36.4	1905	38.5	<u>1924</u>	<u>38.2</u>	8	1953	37.6	1779	41.3	<u>1786</u>	<u>41.1</u>
434.zeusmp	8	943	77.2	932	78.1	<u>933</u>	<u>78.0</u>	8	932	78.1	914	79.7	<u>916</u>	<u>79.5</u>
435.gromacs	8	<u>403</u>	<u>142</u>	408	140	402	142	8	395	144	<u>394</u>	<u>145</u>	394	145
436.cactusADM	8	<u>988</u>	<u>96.8</u>	983	97.2	993	96.3	1	99.9	120	98.3	122	<u>99.1</u>	<u>121</u>
437.leslie3d	8	2041	36.9	<u>1951</u>	<u>38.5</u>	1947	38.6	8	1828	41.1	1759	42.7	<u>1767</u>	<u>42.6</u>
444.namd	8	519	124	524	123	<u>519</u>	<u>124</u>	8	519	124	516	124	<u>517</u>	<u>124</u>
447.dealII	8	632	145	631	145	<u>632</u>	<u>145</u>	8	607	151	<u>605</u>	<u>151</u>	605	151
450.soplex	8	1368	48.8	1329	50.2	<u>1335</u>	<u>50.0</u>	8	1212	55.0	<u>1165</u>	<u>57.3</u>	1164	57.3
453.povray	8	220	194	<u>220</u>	<u>193</u>	221	193	8	188	227	191	223	<u>188</u>	<u>227</u>
454.calculix	8	584	113	588	112	<u>586</u>	<u>113</u>	8	427	155	423	156	<u>424</u>	<u>156</u>
459.GemsFDTD	8	2187	38.8	2233	38.0	<u>2226</u>	<u>38.1</u>	8	2077	40.9	2060	41.2	<u>2063</u>	<u>41.2</u>
465.tonto	8	670	118	679	116	<u>676</u>	<u>116</u>	8	<u>654</u>	<u>120</u>	653	121	656	120
470.lbm	8	3072	35.8	3036	36.2	<u>3045</u>	<u>36.1</u>	8	2480	44.3	2496	44.0	<u>2491</u>	<u>44.1</u>
481.wrf	8	1484	60.2	<u>1484</u>	<u>60.2</u>	1466	61.0	8	1415	63.2	<u>1403</u>	<u>63.7</u>	1402	63.7
482.sphinx3	8	1330	117	<u>1345</u>	<u>116</u>	1363	114	8	1270	123	<u>1261</u>	<u>124</u>	1257	124

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

General Notes

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 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):

```
/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.deall: -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
```

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

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealIII: -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

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.20090714.08.html>



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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.20090714.08.xml>

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