SPEC® CFP2006 Result
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Acer Incorporated

Acer Altos R920 (Intel Xeon E7320)

$SPECfp^®\_rate2006 =$ 95.5

SPECfp_rate_base2006 = 89.7

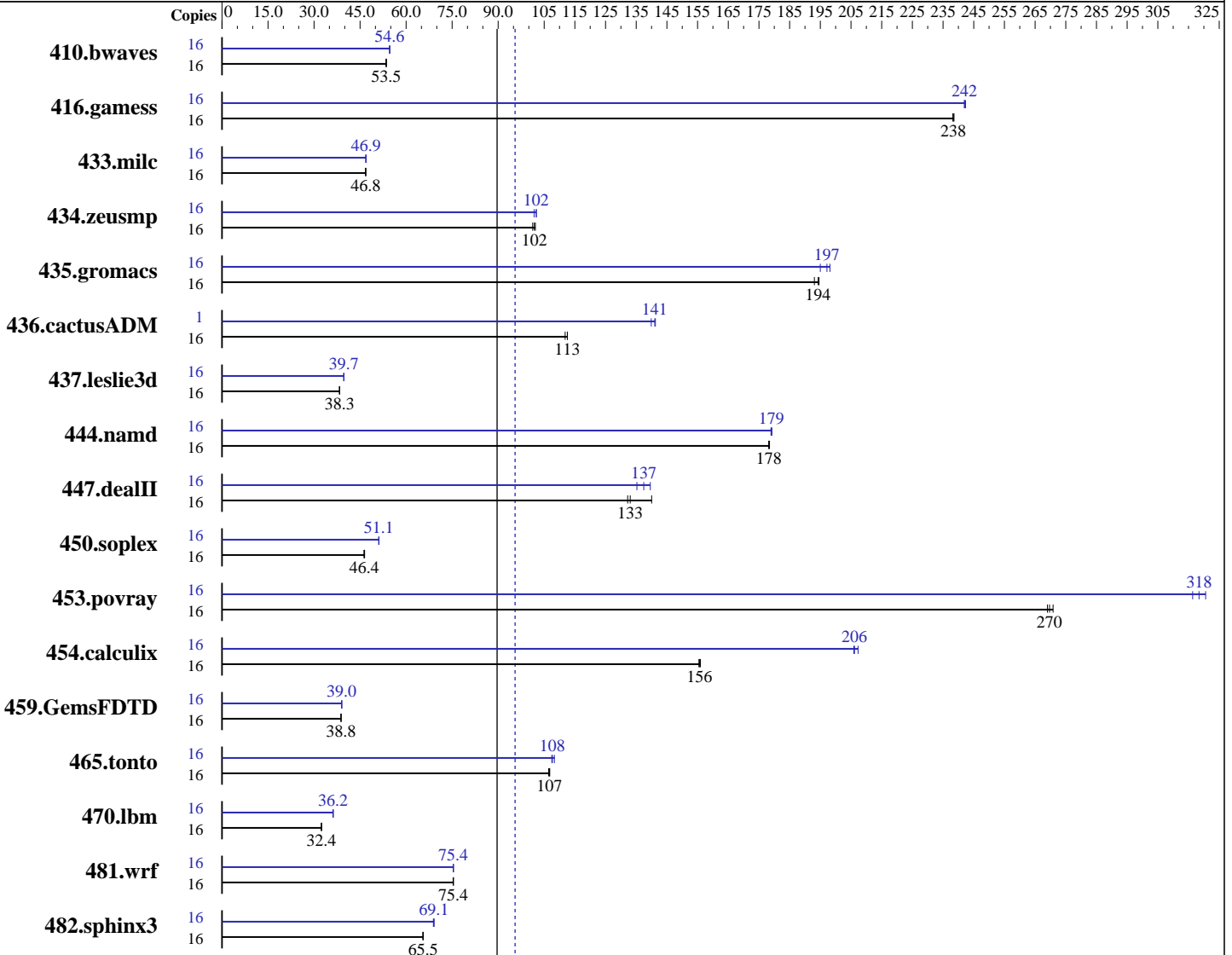**CPU2006 license:** 97
Test sponsor: Acer Incorporated
Tested by: Acer Incorporated

Test date: Oct-2007
Hardware Availability: Nov-2007
Software Availability: Nov-2007

SPECfp_rate_base2006 = 89.7

SPECfp_rate2006 = 95.5

Copies	
410.bwaves	16 / 54.6
	16 / 53.5
416.gamess	16 / 242
	16 / 238
433.milc	16 / 46.9
	16 / 46.8
434.zeusmp	16 / 102
	16 / 102
435.gromacs	16 / 197
	16 / 194
436.cactusADM	1 / 141
	16 / 113
437.leslie3d	16 / 39.7
	16 / 38.3
444.namd	16 / 179
	16 / 178
447.dealII	16 / 137
	16 / 133
450.soplex	16 / 51.1
	16 / 46.4
453.povray	16 / 318
	16 / 270
454.calculix	16 / 206
	16 / 156
459.GemsFDTD	16 / 39.0
	16 / 38.8
465.tonto	16 / 108
	16 / 107
470.lbm	16 / 36.2
	16 / 32.4
481.wrf	16 / 75.4
	16 / 75.4
482.sphinx3	16 / 69.1
	16 / 65.5

Hardware

CPU Name:	Intel Xeon E7320
CPU Characteristics:	1066MHz system bus
CPU MHz:	2130
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 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 chip, 2 MB shared / 2 cores

Continued on next page

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

Continued on next page

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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:	MicroQuill SmartHeap Library 8.1

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	4069	53.4	**4061**	**53.5**	4058	53.6	16	3979	54.7	3980	54.6	**3979**	**54.6**
416.gamess	16	1315	238	1313	239	**1314**	**238**	16	1295	242	1293	242	**1295**	**242**
433.milc	16	**3136**	**46.8**	3135	46.9	3138	46.8	16	3130	46.9	**3132**	**46.9**	3133	46.9
434.zeusmp	16	**1430**	**102**	1426	102	1438	101	16	1431	102	**1422**	**102**	1421	102
435.gromacs	16	592	193	587	195	**588**	**194**	16	577	198	586	195	**579**	**197**
436.cactusADM	16	1710	112	1699	113	**1699**	**113**	1	85.4	140	84.6	141	**84.7**	**141**
437.leslie3d	16	**3926**	**38.3**	3927	38.3	3925	38.3	16	**3787**	**39.7**	3788	39.7	3787	39.7
444.namd	16	719	178	**720**	**178**	720	178	16	717	179	**717**	**179**	716	179
447.dealII	16	1384	132	**1376**	**133**	1307	140	16	1354	135	1311	140	**1332**	**137**
450.soplex	16	**2875**	**46.4**	2885	46.3	2871	46.5	16	2612	51.1	**2611**	**51.1**	2608	51.2
453.povray	16	314	271	316	269	**316**	**270**	16	269	316	266	321	**267**	**318**
454.calculix	16	**848**	**156**	847	156	849	155	16	637	207	641	206	**640**	**206**
459.GemsFDTD	16	4373	38.8	**4374**	**38.8**	4380	38.8	16	4348	39.0	**4351**	**39.0**	4354	39.0
465.tonto	16	**1475**	**107**	1479	106	1474	107	16	1453	108	1465	107	**1462**	**108**
470.lbm	16	**6783**	**32.4**	6783	32.4	6782	32.4	16	6070	36.2	6070	36.2	**6070**	**36.2**
481.wrf	16	**2370**	**75.4**	2373	75.3	2370	75.4	16	2371	75.4	2369	75.4	**2371**	**75.4**
482.sphinx3	16	4765	65.4	4752	65.6	**4759**	**65.5**	16	**4515**	**69.1**	4527	68.9	4512	69.1

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

      Optimization for high-frequency FSB applications set to OFF

    All results used taskset to bind processes to 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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CPU2006 license: 97		**Test date:**	Oct-2007
Test sponsor:	Acer Incorporated	**Hardware Availability:**	Nov-2007
Tested by:	Acer Incorporated	**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.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
```

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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