SPEC® CFP2006 Result

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Supermicro

(Test Sponsor: Intel Corporation)

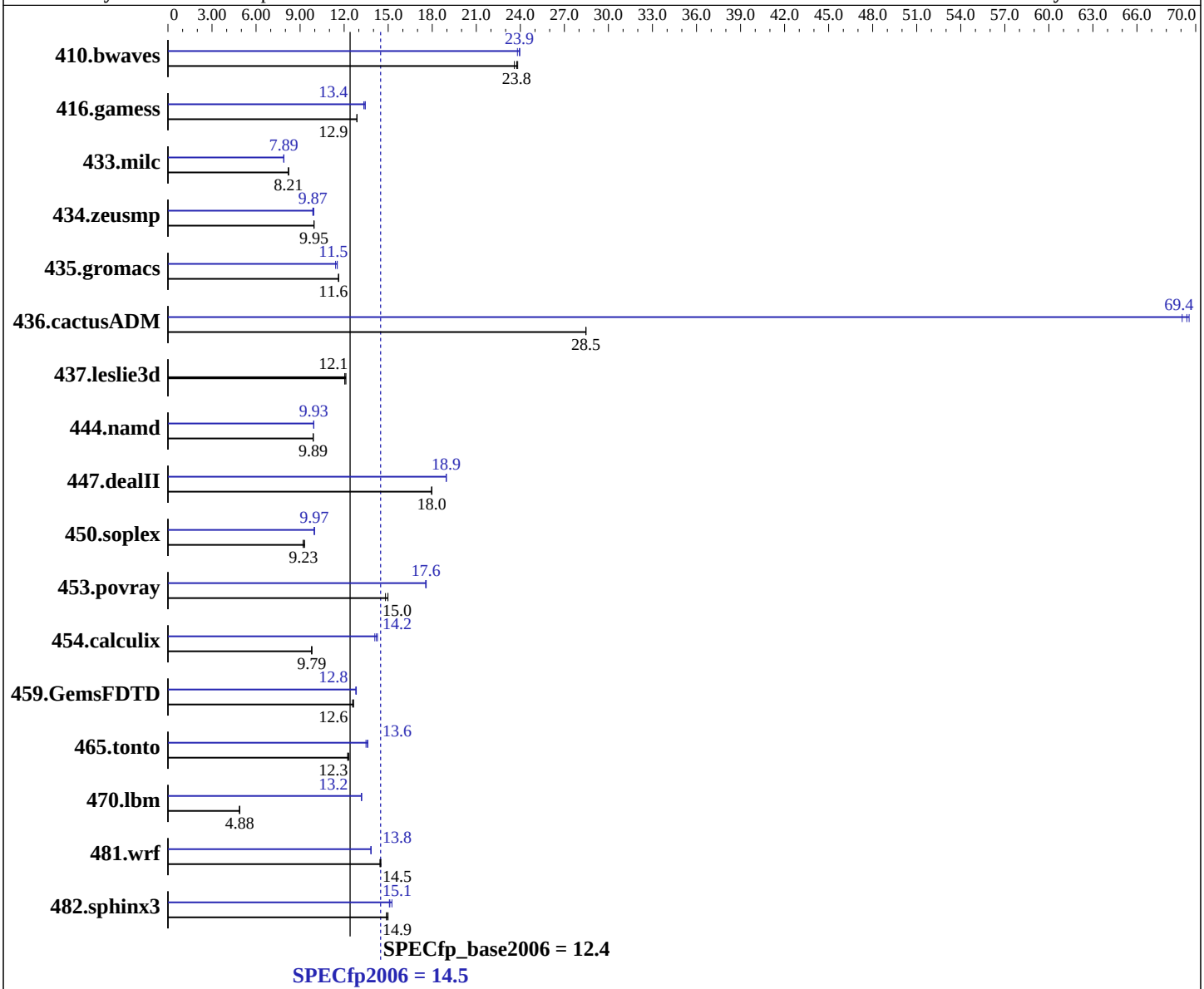
Supermicro X7DB8+ (Intel Xeon processor E5320, 1.86 GHz)

SPECfp®2006 = 14.5

SPECfp_base2006 = 12.4

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Aug-2007
Hardware Availability: Jul-2007
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5320
CPU Characteristics:	Quad Core, 1.86 GHz
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System:	64-Bit SUSE LINUX Enterprise Server 10 SP1 RC1, Kernel linux-cbgm 2.6.16.43-0.5-smp for x86_64
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, run level 3

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L3 Cache: None
Other Cache: None
Memory: 16 GB (16*1GB Micron PC2-4200F CL4-4-4, ECC)
Disk Subsystem: Seagate, SCSI, 73GB, 10Krpm, 1 disk only
Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	576	23.6	570	23.8	**572**	**23.8**	567	24.0	571	23.8	**568**	**23.9**
416.gamess	**1521**	**12.9**	1520	12.9	1521	12.9	**1458**	**13.4**	1468	13.3	1457	13.4
433.milc	**1118**	**8.21**	1117	8.22	1119	8.20	1162	7.90	**1163**	**7.89**	1165	7.88
434.zeusmp	**915**	**9.95**	915	9.95	915	9.95	**922**	**9.87**	922	9.87	916	9.94
435.gromacs	**614**	**11.6**	615	11.6	614	11.6	**619**	**11.5**	625	11.4	619	11.5
436.cactusADM	420	28.5	**420**	**28.5**	420	28.5	172	69.6	**172**	**69.4**	173	69.1
437.leslie3d	775	12.1	**780**	**12.1**	780	12.0	775	12.1	**780**	**12.1**	780	12.0
444.namd	811	9.89	**811**	**9.89**	810	9.90	**807**	**9.93**	807	9.93	808	9.92
447.dealII	**637**	**18.0**	637	18.0	636	18.0	**604**	**18.9**	604	18.9	603	19.0
450.soplex	896	9.31	906	9.21	**903**	**9.23**	835	9.98	837	9.96	**837**	**9.97**
453.povray	355	15.0	359	14.8	**355**	**15.0**	302	17.6	**303**	**17.6**	303	17.6
454.calculix	842	9.80	**842**	**9.79**	843	9.78	578	14.3	586	14.1	**581**	**14.2**
459.GemsFDTD	**840**	**12.6**	839	12.6	844	12.6	827	12.8	**828**	**12.8**	829	12.8
465.tonto	799	12.3	**803**	**12.3**	804	12.2	723	13.6	730	13.5	**724**	**13.6**
470.lbm	2822	4.87	2814	4.88	**2814**	**4.88**	1044	13.2	**1042**	**13.2**	1041	13.2
481.wrf	**772**	**14.5**	770	14.5	774	14.4	807	13.8	808	13.8	**808**	**13.8**
482.sphinx3	1300	15.0	**1307**	**14.9**	1309	14.9	1292	15.1	**1290**	**15.1**	1278	15.3

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

General Notes

```
Bios settings:
Hardware Prefetcher:      Enabled
Adjacent Sector Prefetch: Enabled
All benchmarks compiled in 64-bit mode except
450.soplex, 470.lbm and 482.sphinx3, for peak, are
compiled in 32-bit mode
```

Base Compiler Invocation

C benchmarks:
icc

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Base Compiler Invocation (Continued)

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 -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include
```

433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icpc -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include`

Fortran benchmarks:
```
ifort
```

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`
437.leslie3d: `-DSPEC_CPU_LP64`
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`

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.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 -parallel`

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: `basepeak = yes`

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

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 -parallel -prefetch -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.20090714.33.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.20090714.33.xml`

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