SPEC® CFP2006 Result
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Supermicro
(Test Sponsor: Intel Corporation)

Supermicro X7DB8+ (Intel Xeon processor E5410, 2.33 GHz)

$SPECfp^{®}2006 =$ 19.9
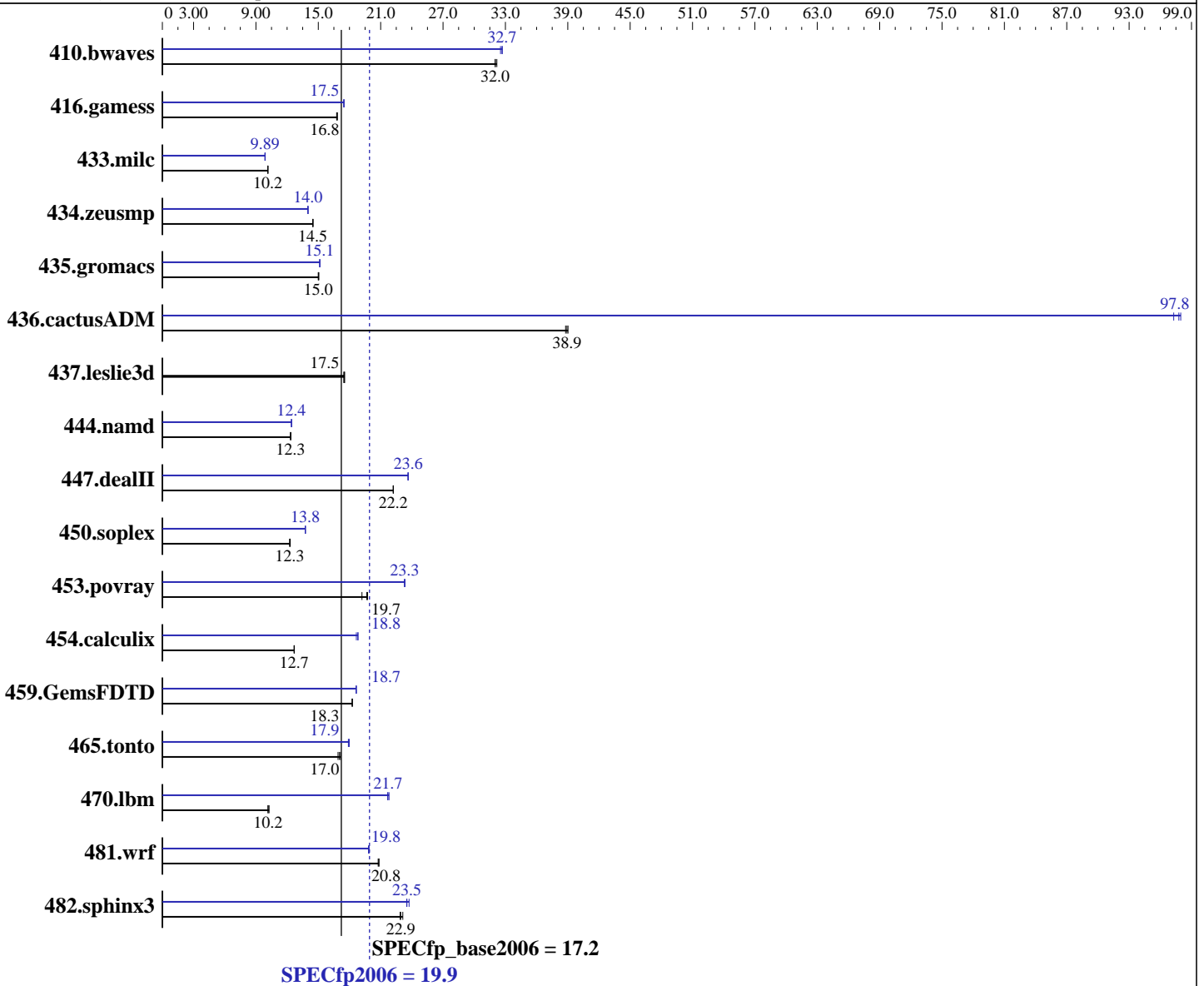
$SPECfp\_base2006 =$ 17.2

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007

Benchmark	Result
410.bwaves	32.7 / 32.0
416.gamess	17.5 / 16.8
433.milc	9.89 / 10.2
434.zeusmp	14.0 / 14.5
435.gromacs	15.1 / 15.0
436.cactusADM	97.8 / 38.9
437.leslie3d	17.5
444.namd	12.4 / 12.3
447.dealII	23.6 / 22.2
450.soplex	13.8 / 12.3
453.povray	23.3 / 19.7
454.calculix	18.8 / 12.7
459.GemsFDTD	18.7 / 18.3
465.tonto	17.9 / 17.0
470.lbm	21.7 / 10.2
481.wrf	19.8 / 20.8
482.sphinx3	23.5 / 22.9

SPECfp_base2006 = 17.2

SPECfp2006 = 19.9

Hardware

CPU Name:	Intel Xeon E5410
CPU Characteristics:	Quad Core, 2.33 GHz
CPU MHz:	2333
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:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

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 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, run level 3

Continued on next page

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L3 Cache:	None	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	16 GB (8 * 2GB DDR2 5300F, 2 rank, CL5-5-5, ECC)	Other Software:	Binutils 2.17.50.0.15
Disk Subsystem:	1x73GB Seagate ST37330LC SCSI 10K RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	424	32.0	422	32.2	**424**	**32.0**	**416**	**32.7**	418	32.5	416	32.7
416.gamess	1163	16.8	**1165**	**16.8**	1168	16.8	**1121**	**17.5**	1120	17.5	1122	17.5
433.milc	904	10.2	**904**	**10.2**	905	10.1	931	9.86	**928**	**9.89**	928	9.89
434.zeusmp	629	14.5	628	14.5	**628**	**14.5**	**650**	**14.0**	649	14.0	650	14.0
435.gromacs	474	15.1	476	15.0	**476**	**15.0**	471	15.1	**472**	**15.1**	472	15.1
436.cactusADM	306	39.0	**307**	**38.9**	308	38.8	**122**	**97.8**	122	98.0	123	97.3
437.leslie3d	**537**	**17.5**	536	17.5	539	17.5	**537**	**17.5**	536	17.5	539	17.5
444.namd	**650**	**12.3**	649	12.4	651	12.3	646	12.4	645	12.4	**646**	**12.4**
447.dealII	515	22.2	**515**	**22.2**	515	22.2	484	23.6	**484**	**23.6**	484	23.6
450.soplex	**680**	**12.3**	678	12.3	681	12.2	**606**	**13.8**	607	13.7	606	13.8
453.povray	**271**	**19.7**	277	19.2	270	19.7	**228**	**23.3**	228	23.3	228	23.3
454.calculix	**651**	**12.7**	651	12.7	650	12.7	438	18.8	442	18.7	**439**	**18.8**
459.GemsFDTD	581	18.3	581	18.3	**581**	**18.3**	569	18.6	569	18.7	**569**	**18.7**
465.tonto	574	17.1	**578**	**17.0**	582	16.9	548	18.0	550	17.9	**548**	**17.9**
470.lbm	1352	10.2	**1350**	**10.2**	1338	10.3	630	21.8	**633**	**21.7**	634	21.7
481.wrf	538	20.8	**536**	**20.8**	536	20.8	562	19.9	**563**	**19.8**	563	19.8
482.sphinx3	843	23.1	**850**	**22.9**	852	22.9	821	23.7	**828**	**23.5**	829	23.5

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, at 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
```

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Test sponsor:	Intel Corporation	**Hardware Availability:**	Nov-2007
Tested by:	Intel Corporation	**Software Availability:**	Nov-2007

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:
```
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.20090714.06.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.20090714.06.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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