SPEC® CFP2006 Result
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Supermicro
Motherboard X7DWN+

SPECfp®2006 = 23.7

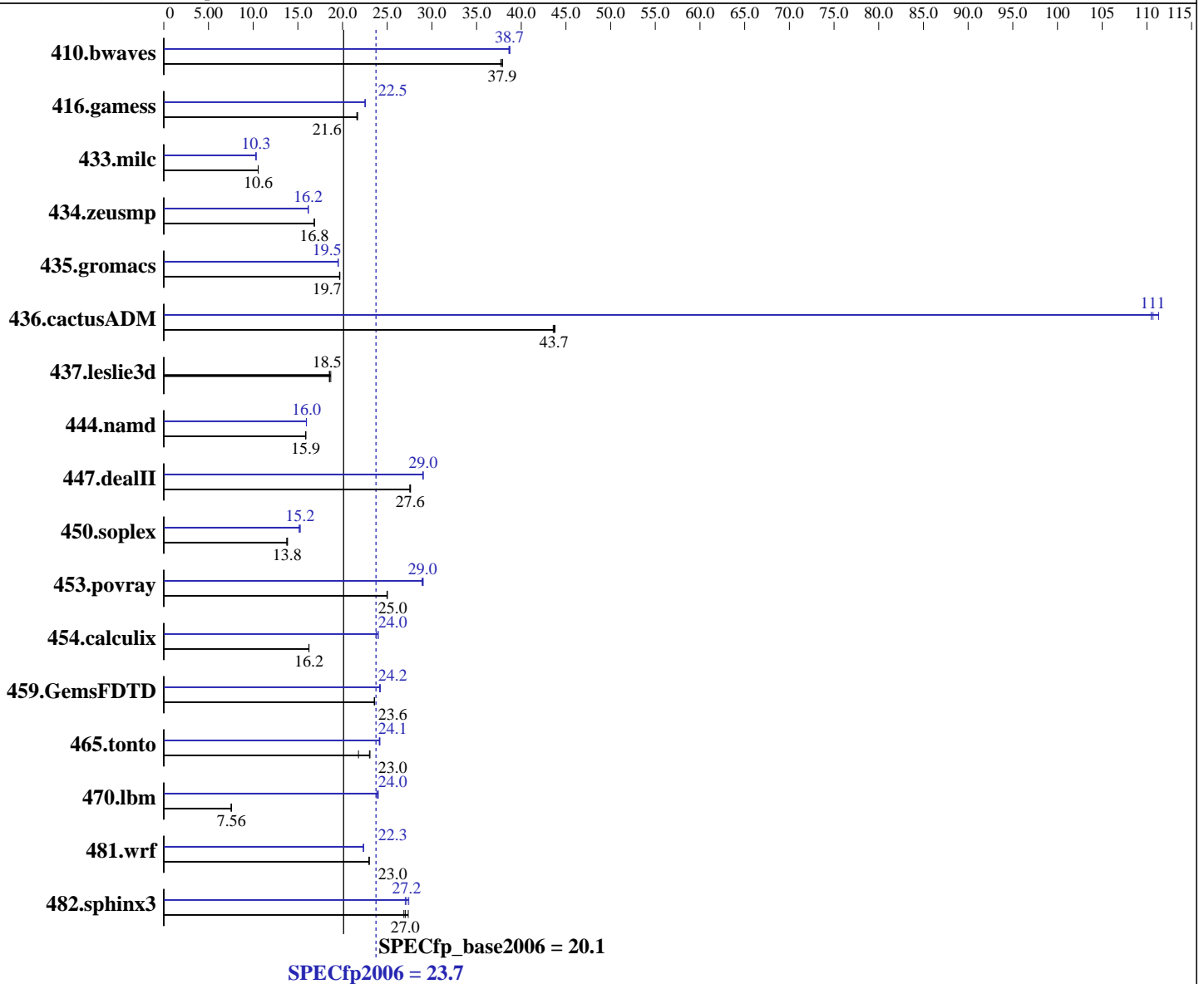SPECfp_base2006 = 20.1

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

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

Benchmark	base	peak
410.bwaves	37.9	38.7
416.gamess	21.6	22.5
433.milc	10.6	10.3
434.zeusmp	16.8	16.2
435.gromacs	19.7	19.5
436.cactusADM	43.7	111
437.leslie3d	18.5	
444.namd	15.9	16.0
447.dealII	27.6	29.0
450.soplex	13.8	15.2
453.povray	25.0	29.0
454.calculix	16.2	24.0
459.GemsFDTD	23.6	24.2
465.tonto	23.0	24.1
470.lbm	7.56	24.0
481.wrf	23.0	22.3
482.sphinx3	27.0	27.2

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SPECfp2006 = 23.7

Hardware

CPU Name:	Intel Xeon E5472
CPU Characteristics:	Quad Core, 3.00GHz
CPU MHz:	3000
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:	SuSE Linux Enterprise Server 10 (x86_64) SP1, kernel 2.6.16.46-0.12-default
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070824
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Default
Base Pointers:	64-bit

Continued on next page

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (16 X 1GB ECC PC2-6400, CL5, FBDIMM)
Disk Subsystem:	Westren Digital WD5000YS 500GB SATA2, 7200RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	360	37.7	**359**	**37.9**	359	37.9	351	38.7	352	38.6	**351**	**38.7**
416.gamess	903	21.7	906	21.6	**904**	**21.6**	869	22.5	869	22.5	**869**	**22.5**
433.milc	869	10.6	**869**	**10.6**	869	10.6	**890**	**10.3**	889	10.3	890	10.3
434.zeusmp	540	16.8	540	16.8	**540**	**16.8**	**563**	**16.2**	563	16.2	563	16.2
435.gromacs	363	19.7	**363**	**19.7**	363	19.7	**366**	**19.5**	366	19.5	366	19.5
436.cactusADM	273	43.8	274	43.6	**274**	**43.7**	108	110	107	111	**108**	**111**
437.leslie3d	503	18.7	507	18.5	**507**	**18.5**	503	18.7	507	18.5	**507**	**18.5**
444.namd	505	15.9	**505**	**15.9**	505	15.9	**503**	**16.0**	503	16.0	503	16.0
447.dealII	416	27.5	414	27.6	**415**	**27.6**	**394**	**29.0**	395	29.0	394	29.0
450.soplex	602	13.9	**605**	**13.8**	606	13.8	551	15.1	**547**	**15.2**	547	15.3
453.povray	**213**	**25.0**	213	25.0	213	25.0	**184**	**29.0**	183	29.0	184	28.9
454.calculix	508	16.3	**508**	**16.2**	508	16.2	344	24.0	**344**	**24.0**	347	23.8
459.GemsFDTD	**450**	**23.6**	450	23.6	451	23.5	438	24.2	**439**	**24.2**	439	24.2
465.tonto	426	23.1	452	21.8	**428**	**23.0**	407	24.2	**408**	**24.1**	408	24.1
470.lbm	1816	7.57	1823	7.54	**1818**	**7.56**	**574**	**24.0**	577	23.8	572	24.0
481.wrf	486	23.0	486	23.0	**486**	**23.0**	500	22.4	**500**	**22.3**	500	22.3
482.sphinx3	713	27.4	**721**	**27.0**	725	26.9	721	27.0	711	27.4	**717**	**27.2**

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

General Notes

```
Tested systems can be used with CSE-825TQ-R700LPV case,
To ensure system stability, a 550W (minimum) ATX power supply
[4-pin (+12V), 8-pin (+12V) and 24-pin are required]
Product description located as of
http://www.supermicro.com/products/motherboard/Xeon1333/5400/X7DWN+.cfm
The system bus runs at 1600 MHz
```

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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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`

Continued on next page

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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.20090714.28.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.20090714.28.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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