SPEC® CFP2006 Result

Supermicro

Motherboard X8DTN+-F (Intel Xeon X5680, 3.33 GHz)

$SPECfp®\_rate2006 = 255$

$SPECfp\_rate\_base2006 = 247$

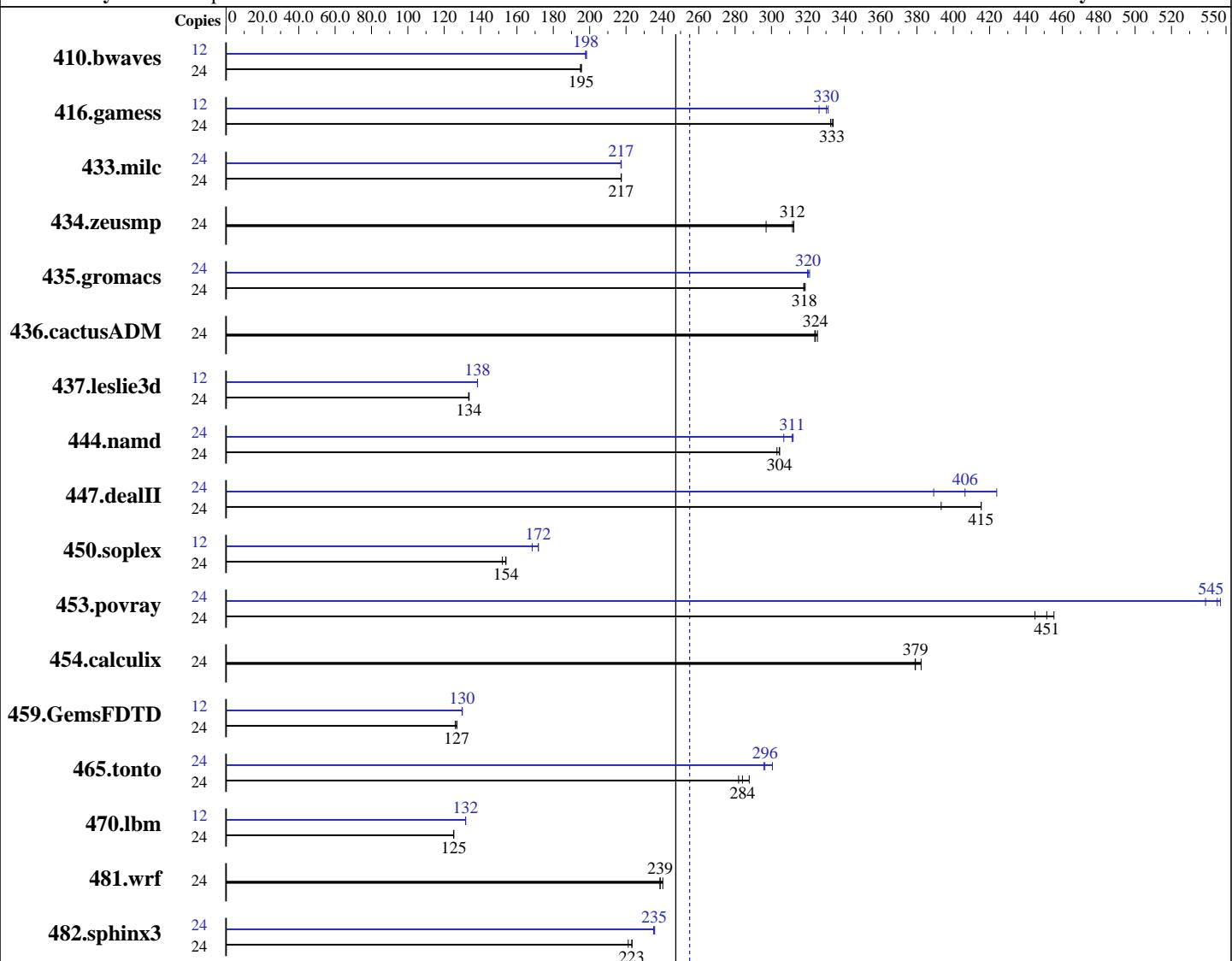**CPU2006 license:** 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: May-2010
Hardware Availability: Mar-2010
Software Availability: Jan-2010

	Copies	
410.bwaves	12	198
	24	195
416.gamess	12	330
	24	333
433.milc	24	217
	24	217
434.zeusmp	24	312
435.gromacs	24	320
	24	318
436.cactusADM	24	324
437.leslie3d	12	138
	24	134
444.namd	24	311
	24	304
447.dealII	24	406
	24	415
450.soplex	12	172
	24	154
453.povray	24	545
	24	451
454.calculix	24	379
459.GemsFDTD	12	130
	24	127
465.tonto	24	296
	24	284
470.lbm	12	132
	24	125
481.wrf	24	239
482.sphinx3	24	235
	24	223

SPECfp_rate_base2006 = 247

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Hardware

CPU Name: Intel Xeon X5680
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3333
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
Kernel 2.6.27.19-5-default
Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1
Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel: No
File System: ReiserFS
System State: Run level 3 (multi-user)

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (12 x 4 GB DDR3-1333 RDIMM, ECC, CL9)	Other Software:	None
Disk Subsystem:	1 x 500 GB SATA II, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1673	195	1668	195	**1670**	**195**	12	825	198	822	198	**824**	**198**
416.gamess	24	**1410**	**333**	1407	334	1413	333	12	**712**	**330**	720	326	709	331
433.milc	24	1013	217	1014	217	**1014**	**217**	24	1013	217	1014	217	**1014**	**217**
434.zeusmp	24	699	312	735	297	**701**	**312**	24	699	312	735	297	**701**	**312**
435.gromacs	24	539	318	**539**	**318**	538	319	24	536	320	534	321	**535**	**320**
436.cactusADM	24	**885**	**324**	886	324	882	325	24	**885**	**324**	886	324	882	325
437.leslie3d	24	**1690**	**134**	1690	133	1687	134	12	**816**	**138**	816	138	815	138
444.namd	24	**632**	**304**	632	304	635	303	24	627	307	617	312	**618**	**311**
447.dealII	24	661	415	698	393	**661**	**415**	24	**676**	**406**	648	424	705	389
450.soplex	24	1317	152	1300	154	**1300**	**154**	12	594	168	583	172	**583**	**172**
453.povray	24	287	445	**283**	**451**	280	455	24	**234**	**545**	237	539	233	547
454.calculix	24	522	379	518	382	**522**	**379**	24	522	379	518	382	**522**	**379**
459.GemsFDTD	24	2020	126	**2008**	**127**	2005	127	12	981	130	**980**	**130**	980	130
465.tonto	24	**831**	**284**	838	282	821	288	24	**797**	**296**	798	296	786	301
470.lbm	24	2633	125	**2633**	**125**	2635	125	12	**1252**	**132**	1252	132	1251	132
481.wrf	24	1116	240	1123	239	**1123**	**239**	24	1116	240	1123	239	**1123**	**239**
482.sphinx3	24	2115	221	**2096**	**223**	2095	223	24	1984	236	**1986**	**235**	1989	235

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

Submit Notes

    The config file option 'submit' was used.
     numactl was used to bind copies to the cores

Operating System Notes

    'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

Platform Notes

    Fan speed set to Full Speed in BIOS Setup.
    As tested, the system used a Supermicro
    PWS-865-PQ power supply, 2 SNK-P0038P heatsinks,
    and 2 FAN-0077L cooling fans.

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General Notes

Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502

Base Compiler Invocation

C benchmarks:
      icc   -m64

C++ benchmarks:
      icpc   -m64

Fortran benchmarks:
      ifort -m64

Benchmarks using both Fortran and C:
      icc   -m64 ifort -m64

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:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:
      -xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc    -m64
```

```
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
icpc   -m64
```

```
450.soplex: icpc -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

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
       470.lbm: -DSPEC_CPU_LP64
       481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

Continued on next page

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Hardware Availability: Mar-2010

Software Availability: Jan-2010

Peak Optimization Flags (Continued)

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -opt-prefetch

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3 -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias -scalar-rep-

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100316.xml

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