SPEC® CFP2006 Result
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Supermicro

$SPECfp^{®}_rate2006 = $ 202

Motherboard X8DTE-F (Intel Xeon X5570, 2.93 GHz)

$SPECfp_rate_base2006 = $ 196
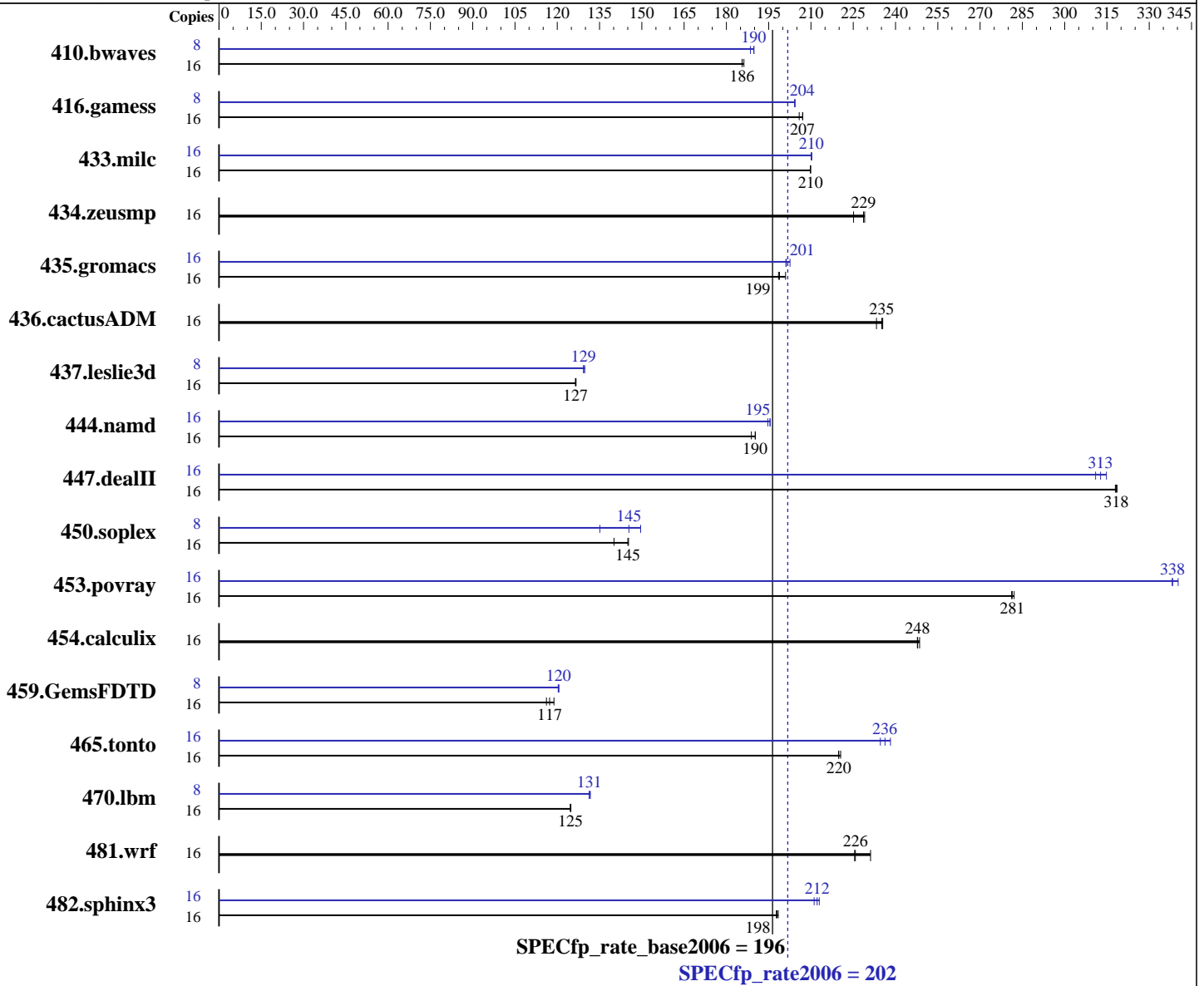
CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Mar-2010
Hardware Availability: Oct-2009
Software Availability: Jan-2010

Copies																							

410.bwaves — 8: 190, 16: 186

416.gamess — 8: 204, 16: 207

433.milc — 16: 210, 16: 210

434.zeusmp — 16: 229

435.gromacs — 16: 201, 16: 199

436.cactusADM — 16: 235

437.leslie3d — 8: 129, 16: 127

444.namd — 16: 195, 16: 190

447.dealII — 16: 313, 16: 318

450.soplex — 8: 145, 16: 145

453.povray — 16: 338, 16: 281

454.calculix — 16: 248

459.GemsFDTD — 8: 120, 16: 117

465.tonto — 16: 236, 16: 220

470.lbm — 8: 131, 16: 125

481.wrf — 16: 226

482.sphinx3 — 16: 212, 16: 198

SPECfp_rate_base2006 = 196

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Hardware

CPU Name: Intel Xeon X5570
CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz: 2933
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 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:	8 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:	Binutils 2.18.50.0.7.20080502
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	16	**1172**	**186**	1168	186	1172	186	8	**573**	**190**	573	190	577	189
416.gamess	16	1522	206	1513	207	**1513**	**207**	8	767	204	**767**	**204**	767	204
433.milc	16	700	210	**700**	**210**	700	210	16	698	210	**699**	**210**	699	210
434.zeusmp	16	**637**	**229**	647	225	636	229	16	**637**	**229**	647	225	636	229
435.gromacs	16	568	201	576	198	**575**	**199**	16	564	203	**568**	**201**	568	201
436.cactusADM	16	**813**	**235**	812	235	820	233	16	**813**	**235**	812	235	820	233
437.leslie3d	16	1187	127	**1189**	**127**	1189	126	8	582	129	580	130	**581**	**129**
444.namd	16	674	190	679	189	**675**	**190**	16	659	195	656	196	**657**	**195**
447.dealII	16	**575**	**318**	576	318	575	319	16	**585**	**313**	581	315	589	311
450.soplex	16	952	140	**920**	**145**	919	145	8	494	135	**459**	**145**	446	150
453.povray	16	**302**	**281**	302	282	303	281	16	252	338	250	340	**252**	**338**
454.calculix	16	531	249	**533**	**248**	533	248	16	531	249	**533**	**248**	533	248
459.GemsFDTD	16	1429	119	1461	116	**1447**	**117**	8	**705**	**120**	704	121	705	120
465.tonto	16	716	220	714	221	**716**	**220**	16	661	238	**666**	**236**	671	235
470.lbm	16	1761	125	1764	125	**1763**	**125**	8	834	132	837	131	**836**	**131**
481.wrf	16	773	231	**792**	**226**	793	225	16	773	231	**792**	**226**	793	225
482.sphinx3	16	1577	198	**1575**	**198**	1572	198	16	1477	211	**1470**	**212**	1464	213

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

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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CPU2006 license: 001176		**Test date:**	Mar-2010
Test sponsor:	Supermicro	**Hardware Availability:**	Oct-2009
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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
```

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

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CPU2006 license: 001176	**Test date:**	Mar-2010
Test sponsor: Supermicro	**Hardware Availability:**	Oct-2009
Tested by: Supermicro	**Software Availability:**	Jan-2010

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:

    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`

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Peak Optimization Flags (Continued)

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:

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

Continued on next page

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Peak Optimization Flags (Continued)

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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