SPEC® CFP2006 Result
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Supermicro

Motherboard X8DTN+ (Intel Xeon E5630, 2.53 GHz)
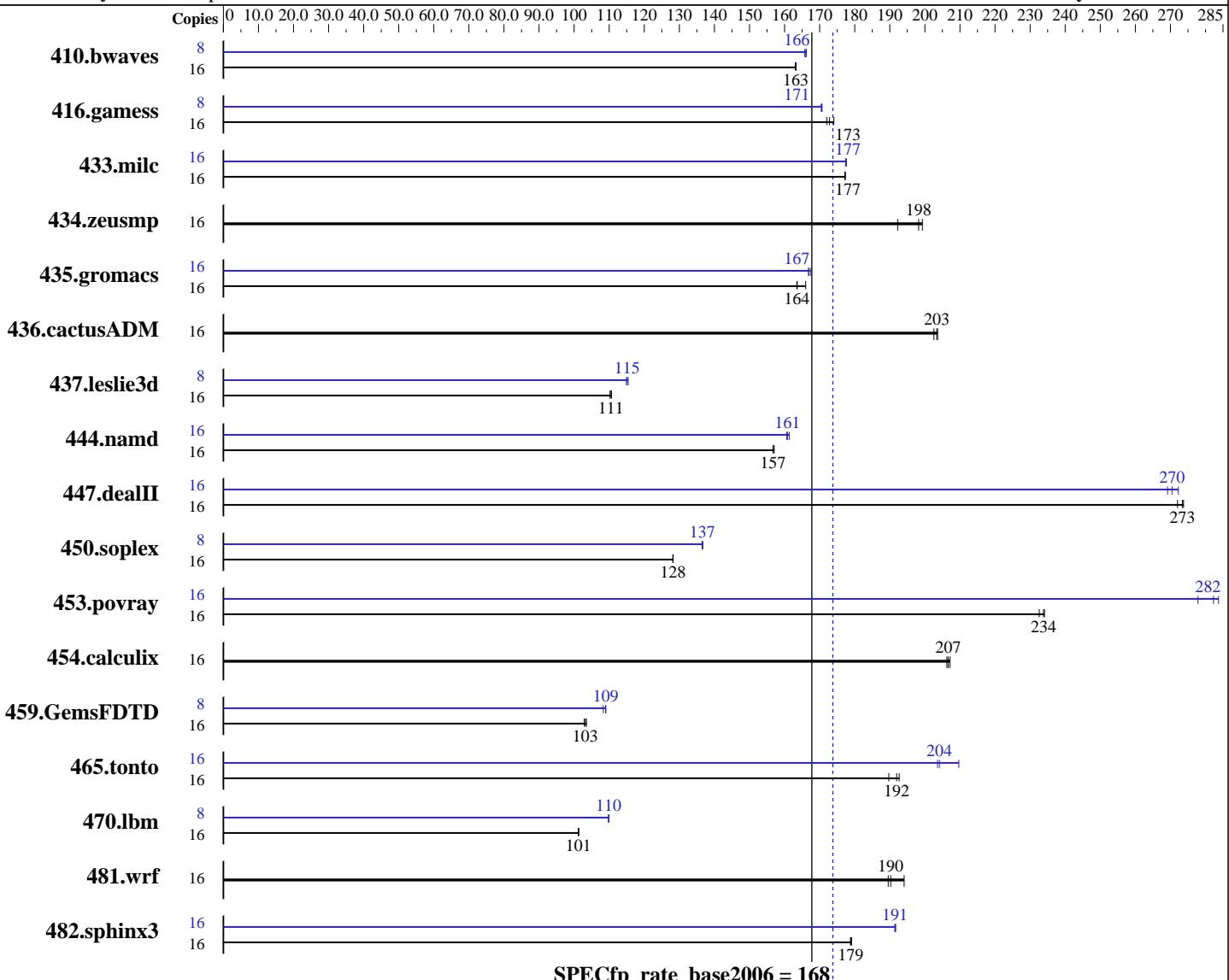
$SPECfp^{®}\_rate2006 = 174$

$SPECfp\_rate\_base2006 = 168$

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

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

Copies	Benchmark	Result
410.bwaves	8	166
	16	163
416.gamess	8	171
	16	173
433.milc	16	177
	16	177
434.zeusmp	16	198
435.gromacs	16	167
	16	164
436.cactusADM	16	203
437.leslie3d	8	115
	16	111
444.namd	16	161
	16	157
447.dealII	16	270
	16	273
450.soplex	8	137
	16	128
453.povray	16	282
	16	234
454.calculix	16	207
459.GemsFDTD	8	109
	16	103
465.tonto	16	204
	16	192
470.lbm	8	110
	16	101
481.wrf	16	190
482.sphinx3	16	191
	16	179

SPECfp_rate_base2006 = 168

SPECfp_rate2006 = 174

Hardware

CPU Name: Intel Xeon E5630
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2533
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: ext3
System State: Run level 3 (multi-user)

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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 DDR3-1066 RDIMM, ECC, CL7)	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	16	**1332**	**163**	1333	163	1332	163	8	654	166	**655**	**166**	656	166
416.gamess	16	1800	174	**1813**	**173**	1821	172	8	919	170	**918**	**171**	918	171
433.milc	16	828	177	829	177	**829**	**177**	16	827	178	828	177	**828**	**177**
434.zeusmp	16	757	192	**735**	**198**	731	199	16	757	192	**735**	**198**	731	199
435.gromacs	16	688	166	699	164	**698**	**164**	16	683	167	685	167	**685**	**167**
436.cactusADM	16	**940**	**203**	939	204	944	203	16	**940**	**203**	939	204	944	203
437.leslie3d	16	1359	111	1364	110	**1361**	**111**	8	652	115	**653**	**115**	654	115
444.namd	16	819	157	**819**	**157**	817	157	16	795	161	**798**	**161**	799	161
447.dealII	16	**669**	**273**	673	272	669	274	16	672	272	680	269	**677**	**270**
450.soplex	16	**1041**	**128**	1041	128	1041	128	8	**489**	**137**	488	137	489	136
453.povray	16	**364**	**234**	366	233	364	234	16	306	278	300	284	**302**	**282**
454.calculix	16	**639**	**207**	637	207	640	206	16	**639**	**207**	637	207	640	206
459.GemsFDTD	16	1640	104	1650	103	**1645**	**103**	8	784	108	**779**	**109**	779	109
465.tonto	16	830	190	**820**	**192**	817	193	16	773	204	**771**	**204**	751	210
470.lbm	16	2170	101	**2171**	**101**	2172	101	8	1000	110	1001	110	**1001**	**110**
481.wrf	16	921	194	943	190	**939**	**190**	16	921	194	943	190	**939**	**190**
482.sphinx3	16	1741	179	1744	179	**1743**	**179**	16	1629	191	**1629**	**191**	1627	192

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 CSE-745TQ-920B chassis.
The chassis is bundled with a PWS-920P-1R power supply, 2 SNK-P0038P heatsinks,
as well as 2 FAN-0082L4 and 3 FAN-0074L4 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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Test sponsor:	Supermicro	**Hardware Availability:**	Mar-2010
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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:

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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:

Continued on next page

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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.20100804.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.20100804.xml

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