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

Supermicro X7DB8+ (Intel Xeon processor E5420, 2.50 GHz)

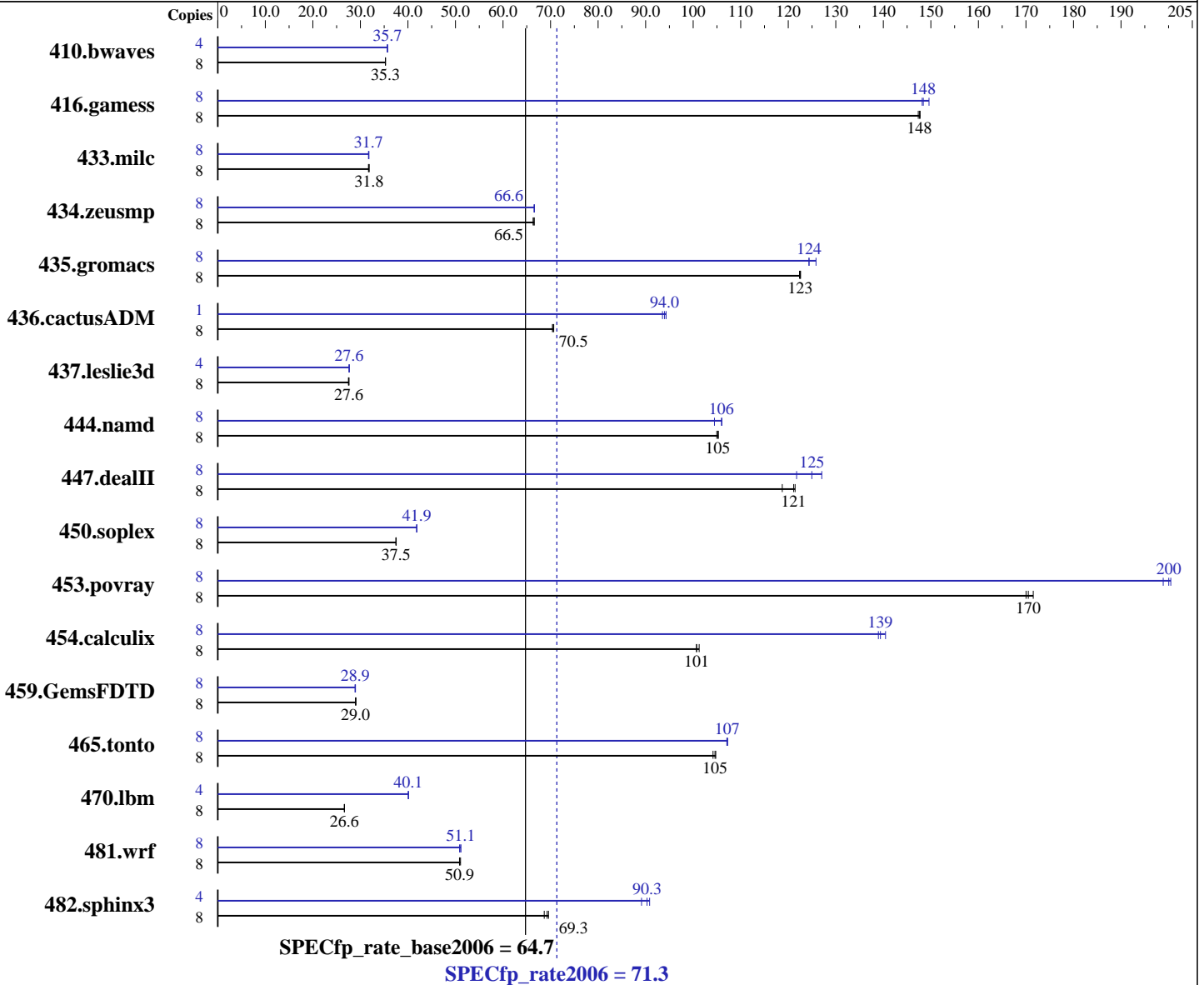$SPECfp^{®}\_rate2006 = \qquad 71.3$

$SPECfp\_rate\_base2006 = \quad 64.7$

CPU2006 license: 13		**Test date:**	Nov-2007
Test sponsor:	Intel Corporation	**Hardware Availability:**	Nov-2007
Tested by:	Intel Corporation	**Software Availability:**	Nov-2007

Copies

Benchmark	Copies	Value
410.bwaves	4	35.7
	8	35.3
416.gamess	8	148
	8	148
433.milc	8	31.7
	8	31.8
434.zeusmp	8	66.6
	8	66.5
435.gromacs	8	124
	8	123
436.cactusADM	1	94.0
	8	70.5
437.leslie3d	4	27.6
	8	27.6
444.namd	8	106
	8	105
447.dealII	8	125
	8	121
450.soplex	8	41.9
	8	37.5
453.povray	8	200
	8	170
454.calculix	8	139
	8	101
459.GemsFDTD	8	28.9
	8	29.0
465.tonto	8	107
	8	105
470.lbm	4	40.1
	8	26.6
481.wrf	8	51.1
	8	50.9
482.sphinx3	4	90.3
	8	69.3

SPECfp_rate_base2006 = 64.7

SPECfp_rate2006 = 71.3

Hardware
CPU Name:	Intel Xeon E5420
CPU Characteristics:	Quad Core, 2.50 GHz
CPU MHz:	2500
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

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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 Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3084	35.2	**3082**	**35.3**	3082	35.3	4	1522	35.7	**1523**	**35.7**	1525	35.6
416.gamess	8	1060	148	1063	147	**1061**	**148**	8	**1055**	**148**	1057	148	1047	150
433.milc	8	2317	31.7	**2308**	**31.8**	2307	31.8	8	2316	31.7	**2314**	**31.7**	2309	31.8
434.zeusmp	8	**1094**	**66.5**	1094	66.6	1098	66.3	8	**1094**	**66.6**	1094	66.6	1093	66.6
435.gromacs	8	**466**	**123**	466	123	467	122	8	454	126	459	124	**459**	**124**
436.cactusADM	8	1358	70.4	**1355**	**70.5**	1353	70.7	1	127	94.3	128	93.5	**127**	**94.0**
437.leslie3d	8	2737	27.5	**2727**	**27.6**	2726	27.6	4	**1360**	**27.6**	1360	27.6	1361	27.6
444.namd	8	611	105	**610**	**105**	609	105	8	605	106	**606**	**106**	614	104
447.dealII	8	771	119	754	121	**755**	**121**	8	**732**	**125**	752	122	720	127
450.soplex	8	1777	37.5	**1778**	**37.5**	1782	37.4	8	1595	41.8	**1594**	**41.9**	1593	41.9
453.povray	8	250	170	**250**	**170**	248	172	8	**213**	**200**	212	200	214	199
454.calculix	8	**655**	**101**	655	101	652	101	8	**474**	**139**	470	140	475	139
459.GemsFDTD	8	2921	29.1	**2928**	**29.0**	2929	29.0	8	**2937**	**28.9**	2938	28.9	2930	29.0
465.tonto	8	756	104	**753**	**105**	752	105	8	735	107	**735**	**107**	734	107
470.lbm	8	4127	26.6	4126	26.6	**4127**	**26.6**	4	**1371**	**40.1**	1370	40.1	1371	40.1
481.wrf	8	1750	51.1	1758	50.8	**1756**	**50.9**	8	1757	50.9	1748	51.1	**1748**	**51.1**
482.sphinx3	8	2271	68.7	**2251**	**69.3**	2241	69.6	4	875	89.1	**863**	**90.3**	858	90.8

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

General Notes

```
   Bios settings:
   Hardware Prefetcher:      Disabled
   Adjacent Sector Prefetch: Disabled
    All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex
    470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
   The taskset utility was used to bind processes to cores
```

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

C++ benchmarks:
    -fast

Fortran benchmarks:
    -fast

Benchmarks using both Fortran and C:
    -fast

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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 (except as noted below):
```
ifort
```

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib`
`-I/opt/intel/fc/10.1.008/include`

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`
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`

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: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -prefetch -opt-malloc-options=3`

459.GemsFDTD: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -Ob0 -prefetch`

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 -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

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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

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

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