SPEC® CFP2006 Result

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Supermicro

(Test Sponsor: Intel Corporation)

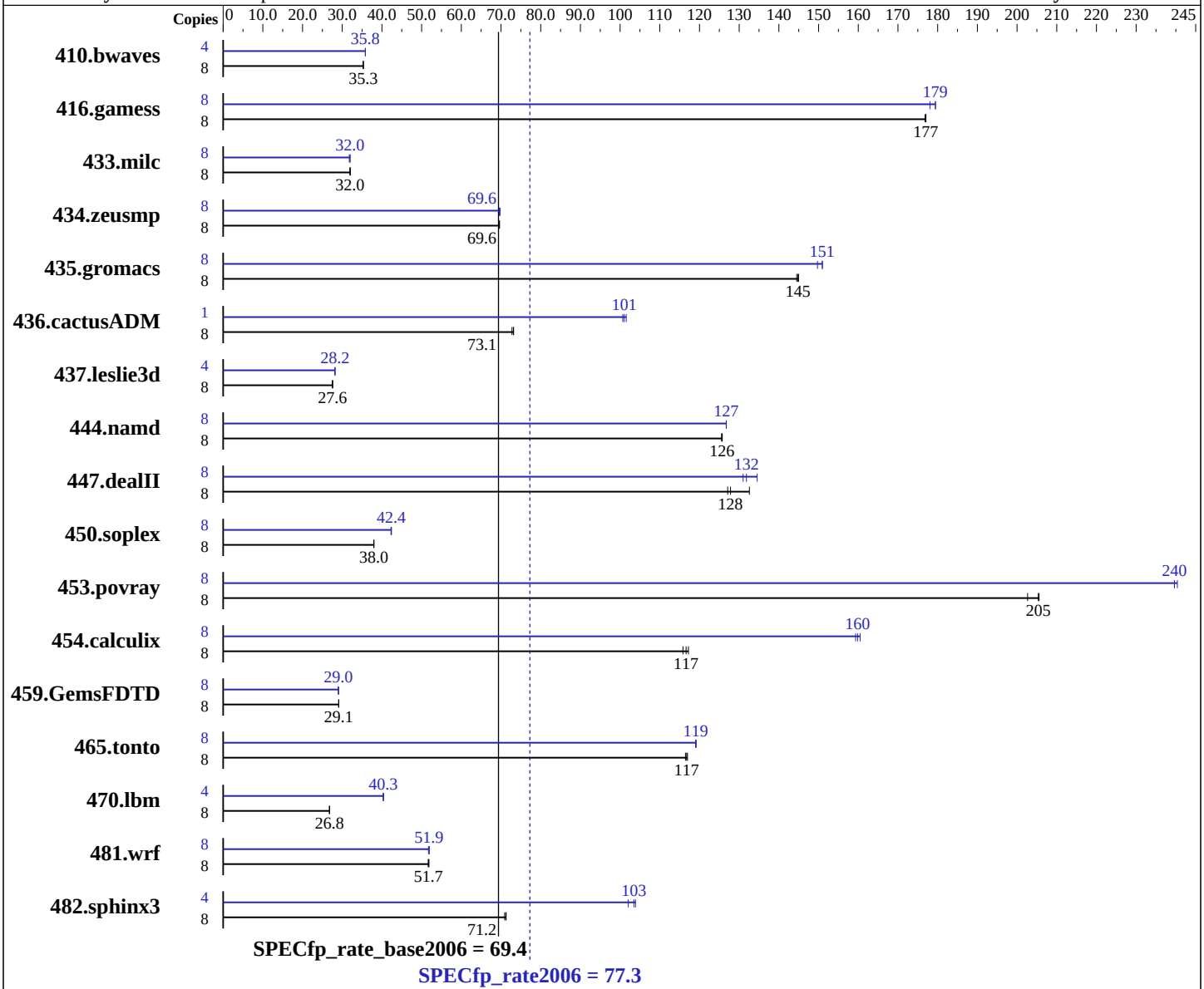
Supermicro X7DB8+ (Intel Xeon processor E5450, 3.00 GHz)

SPECfp®_rate2006 = 77.3

SPECfp_rate_base2006 = 69.4

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

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



Hardware

CPU Name:	Intel Xeon E5450
CPU Characteristics:	Quad Core, 3.00 GHz
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

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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
Other Cache: None
Memory: 16 GB (8 * 2GB DDR2 5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73GB Seagate ST37330LC SCSI 10K RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3079	35.3	3081	35.3	**3080**	**35.3**	4	**1517**	**35.8**	1518	35.8	1517	35.8
416.gamess	8	**885**	**177**	886	177	885	177	8	873	179	880	178	**873**	**179**
433.milc	8	**2295**	**32.0**	2299	31.9	2294	32.0	8	2297	32.0	**2298**	**32.0**	2311	31.8
434.zeusmp	8	**1046**	**69.6**	1048	69.5	1046	69.6	8	**1045**	**69.6**	1044	69.8	1046	69.6
435.gromacs	8	395	144	**394**	**145**	394	145	8	382	150	**378**	**151**	378	151
436.cactusADM	8	**1308**	**73.1**	1306	73.2	1314	72.8	1	118	102	119	101	**118**	**101**
437.leslie3d	8	2728	27.6	2733	27.5	**2728**	**27.6**	4	1335	28.2	**1335**	**28.2**	1334	28.2
444.namd	8	**510**	**126**	511	126	510	126	8	506	127	506	127	**506**	**127**
447.dealII	8	690	133	**716**	**128**	720	127	8	699	131	**694**	**132**	680	135
450.soplex	8	1757	38.0	1758	37.9	**1757**	**38.0**	8	**1575**	**42.4**	1578	42.3	1574	42.4
453.povray	8	207	206	**207**	**205**	210	203	8	178	240	**178**	**240**	177	240
454.calculix	8	**566**	**117**	563	117	570	116	8	414	159	411	160	**413**	**160**
459.GemsFDTD	8	2914	29.1	**2914**	**29.1**	2917	29.1	8	2925	29.0	**2924**	**29.0**	2920	29.1
465.tonto	8	673	117	**674**	**117**	676	116	8	**661**	**119**	661	119	661	119
470.lbm	8	**4103**	**26.8**	4103	26.8	4101	26.8	4	1360	40.4	**1363**	**40.3**	1363	40.3
481.wrf	8	**1727**	**51.7**	1729	51.7	1723	51.9	8	1727	51.7	1722	51.9	**1722**	**51.9**
482.sphinx3	8	**2189**	**71.2**	2199	70.9	2187	71.3	4	764	102	**753**	**103**	750	104

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

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

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`

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