SPEC® CFP2006 Result

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Supermicro

(Test Sponsor: Intel Corporation)

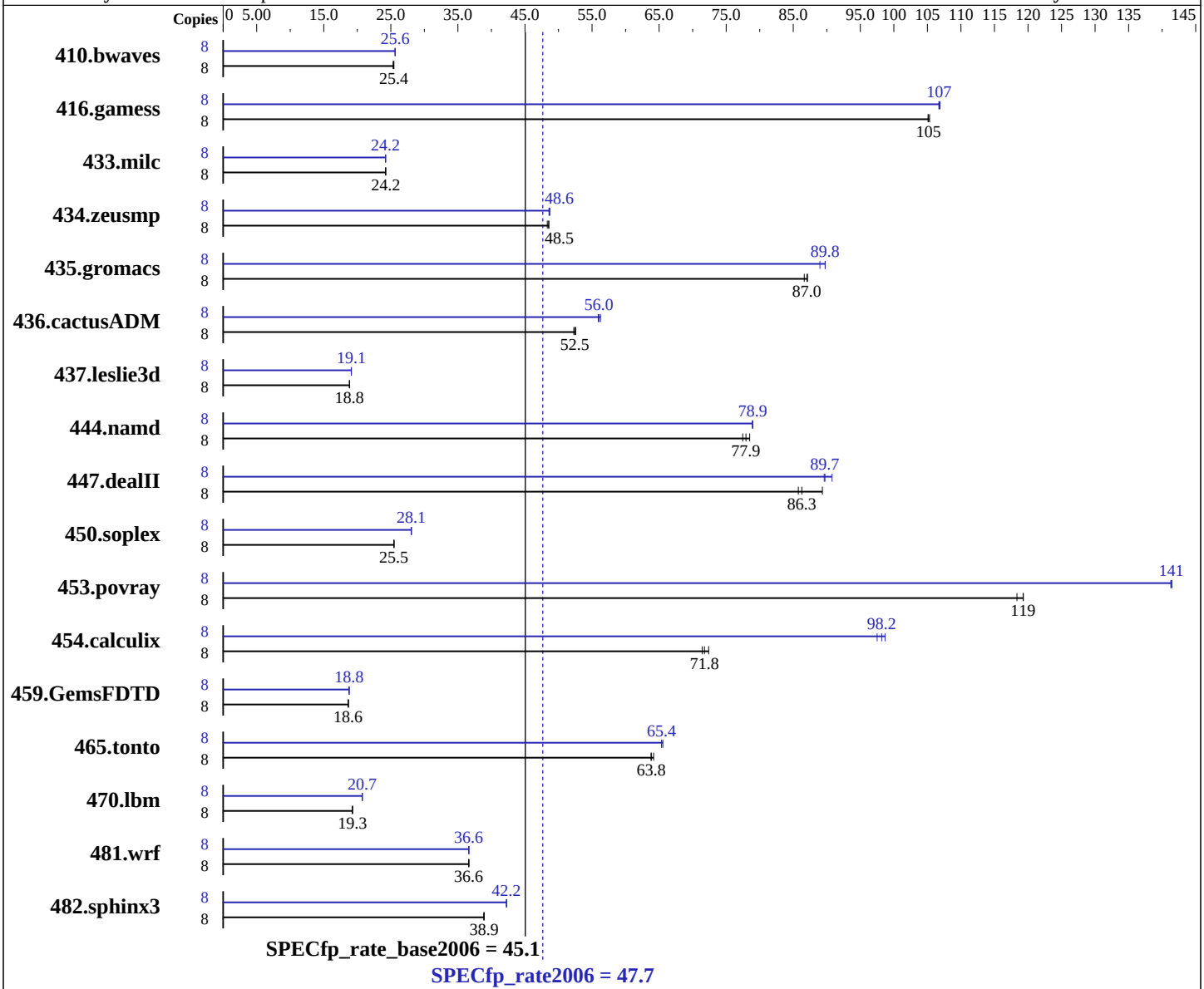
Supermicro X7DB8+ (Intel Xeon processor E5320, 1.86 GHz)

SPECfp®_rate2006 = 47.7

SPECfp_rate_base2006 = 45.1

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

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



Hardware

CPU Name:	Intel Xeon E5320
CPU Characteristics:	Quad Core, 1.86 GHz
CPU MHz:	1867
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:	8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System:	64-Bit SUSE LINUX Enterprise Server 10 SP1, Kernel linux-cbgm 2.6.16.43-0.5-smp for x86_64
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 Build 20070725
Auto Parallel:	No
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (16*1GB Micron DDR2 4200F CL4-4-4, ECC)
Disk Subsystem: Seagate, SCSI, 73GB, 10Krpm, 1 disk only
Other Hardware: None

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	4291	25.3	4271	25.5	**4273**	**25.4**	8	4241	25.6	4239	25.6	**4241**	**25.6**
416.gamess	8	**1489**	**105**	1490	105	1487	105	8	1466	107	**1467**	**107**	1468	107
433.milc	8	3033	24.2	**3031**	**24.2**	3030	24.2	8	**3032**	**24.2**	3033	24.2	3031	24.2
434.zeusmp	8	1506	48.3	1499	48.6	**1500**	**48.5**	8	**1497**	**48.6**	1494	48.7	1499	48.6
435.gromacs	8	656	87.1	659	86.6	**656**	**87.0**	8	**636**	**89.8**	636	89.8	642	89.0
436.cactusADM	8	1829	52.3	**1823**	**52.5**	1819	52.6	8	1699	56.3	1709	55.9	**1706**	**56.0**
437.leslie3d	8	**3992**	**18.8**	3995	18.8	3992	18.8	8	**3934**	**19.1**	3938	19.1	3932	19.1
444.namd	8	817	78.5	**823**	**77.9**	828	77.5	8	813	79.0	813	78.9	**813**	**78.9**
447.dealII	8	**1061**	**86.3**	1024	89.3	1067	85.8	8	1021	89.6	**1020**	**89.7**	1008	90.8
450.soplex	8	**2621**	**25.5**	2621	25.5	2618	25.5	8	2377	28.1	**2378**	**28.1**	2378	28.1
453.povray	8	357	119	360	118	**357**	**119**	8	301	141	**301**	**141**	301	141
454.calculix	8	924	71.4	912	72.4	**920**	**71.8**	8	**672**	**98.2**	677	97.5	669	98.7
459.GemsFDTD	8	4542	18.7	**4552**	**18.6**	4556	18.6	8	**4519**	**18.8**	4518	18.8	4520	18.8
465.tonto	8	**1233**	**63.8**	1227	64.2	1234	63.8	8	**1204**	**65.4**	1205	65.3	1201	65.6
470.lbm	8	5702	19.3	5700	19.3	**5701**	**19.3**	8	5299	20.7	**5298**	**20.7**	5298	20.7
481.wrf	8	**2440**	**36.6**	2441	36.6	2438	36.6	8	2441	36.6	2438	36.7	**2440**	**36.6**
482.sphinx3	8	4006	38.9	**4007**	**38.9**	4013	38.9	8	3688	42.3	3692	42.2	**3691**	**42.2**

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, for peak, are
compiled in 32-bit mode
The taskset command 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):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

433.milc: `icc`

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

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

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

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/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`

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

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 -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.20090714.32.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.20090714.32.xml

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