



SPEC® CFP2006 Result

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SGI

SGI Altix ICE 8200EX (Intel Xeon E5472, 3.00 GHz)

SPECfp®_rate2006 = 88.0

SPECfp_rate_base2006 = 78.0

CPU2006 license: 4

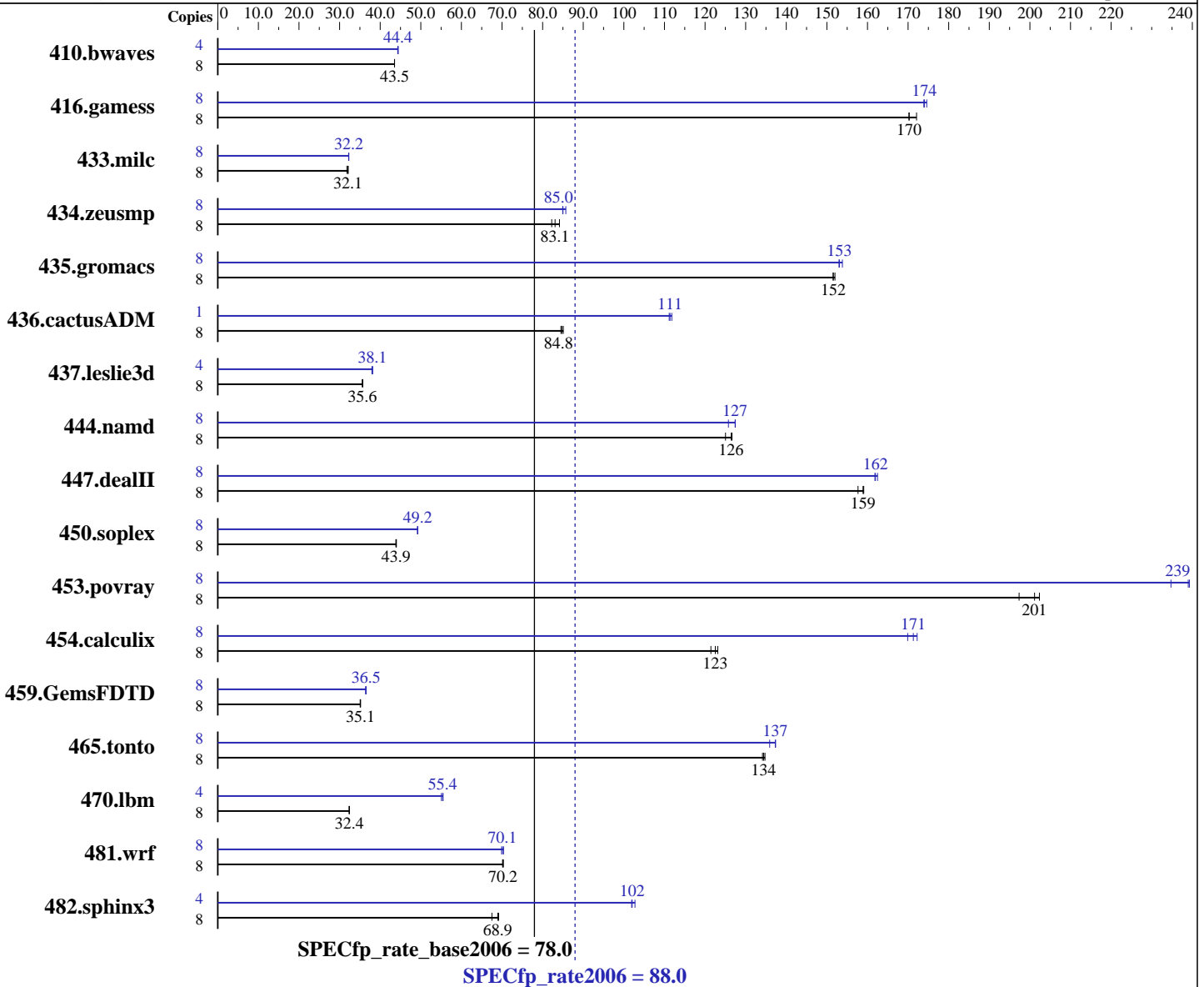
Test sponsor: SGI

Tested by: SGI

Test date: May-2008

Hardware Availability: Mar-2008

Software Availability: Apr-2008



Hardware

CPU Name: Intel Xeon E5472
 CPU Characteristics: Quad Core, 3.0 GHz
 CPU MHz: 2992
 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: SUSE Linux Enterprise Server 10 (x86_64) SP1 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux Version 10.1, Build 20070913
 Auto Parallel: Yes
 File System: NFSv3, IPoIB
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8*2GB PC2-6400 CL5-5-5 FB-DIMMs)
Disk Subsystem: 16 TB RAID 6+1
32 x 500 GB SATA (Seagate Barracuda 7200 rpm)
Other Hardware: None

Other Software: SGI ProPack 5 for Linux Service Pack 5
Binutils 2.17

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	2497	43.5	2498	43.5	2498	43.5	4	1227	44.3	1224	44.4	1224	44.4
416.gamess	8	910	172	920	170	920	170	8	901	174	897	175	900	174
433.milc	8	2310	31.8	2289	32.1	2288	32.1	8	2278	32.2	2275	32.3	2279	32.2
434.zeusmp	8	885	82.2	876	83.1	865	84.1	8	857	84.9	849	85.7	856	85.0
435.gromacs	8	377	152	376	152	377	152	8	373	153	373	153	371	154
436.cactusADM	8	1128	84.8	1131	84.5	1123	85.1	1	107	111	107	112	107	111
437.leslie3d	8	2110	35.6	2113	35.6	2105	35.7	4	986	38.1	987	38.1	991	38.0
444.namd	8	507	127	507	126	513	125	8	504	127	510	126	503	127
447.dealII	8	575	159	576	159	580	158	8	565	162	563	162	566	162
450.soplex	8	1521	43.9	1517	44.0	1520	43.9	8	1357	49.2	1355	49.3	1355	49.2
453.povray	8	210	202	216	197	212	201	8	178	239	181	235	178	239
454.calculix	8	536	123	543	121	539	123	8	385	171	388	170	383	172
459.GemsFDTD	8	2421	35.1	2417	35.1	2413	35.2	8	2324	36.5	2326	36.5	2331	36.4
465.tonto	8	587	134	584	135	586	134	8	573	137	573	137	579	136
470.lbm	8	3391	32.4	3398	32.3	3393	32.4	4	991	55.5	998	55.1	992	55.4
481.wrf	8	1271	70.3	1274	70.1	1272	70.2	8	1278	69.9	1270	70.4	1275	70.1
482.sphinx3	8	2261	68.9	2254	69.2	2310	67.5	4	764	102	759	103	765	102

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

General Notes

BIOS settings:

Snoop Filter: Enabled

Hardware Prefetcher: Enabled

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

Parallel settings for 436.cactusADM peak:

OMP_NUM_THREADS = 8

KMP_AFFINITY = physical,0

KMP_STACKSIZE = 64M



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Base Compiler Invocation

C benchmarks:

icc

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.deallI: -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.dealIII: -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.20090714.03.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.20090714.03.xml>

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 18:00:29 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 29 May 2008.