SPEC® CFP2006 Result

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SGI

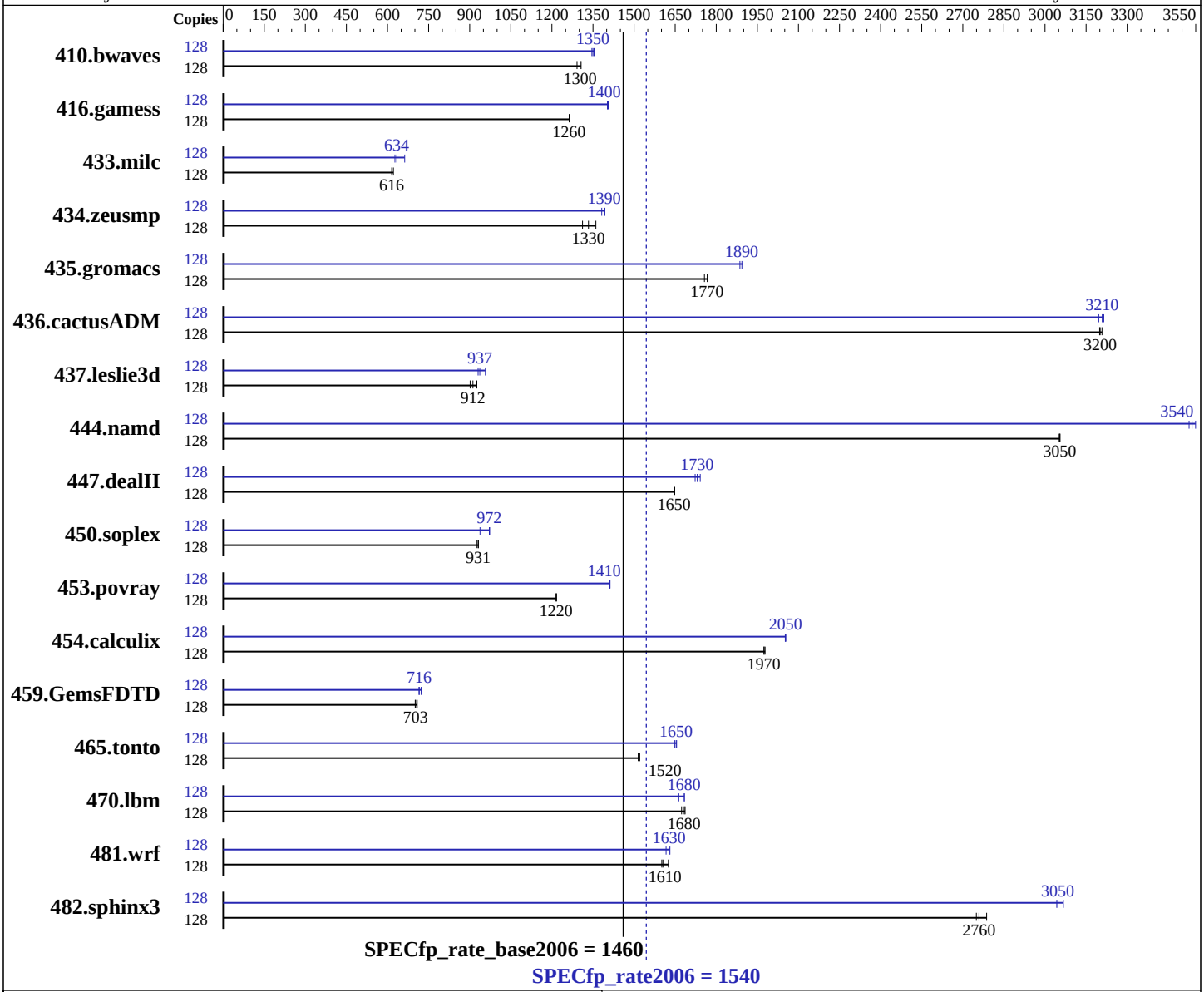
SGI Altix 4700 Density System (Itanium Processor 9150M 1.66GHz/24M)

SPECfp®_rate2006 = 1540

SPECfp_rate_base2006 = 1460

CPU2006 license: 4
Test sponsor: SGI
Tested by: SGI

Test date: Jul-2008
Hardware Availability: Nov-2007
Software Availability: Jan-2008



Hardware

CPU Name:	Dual-Core Intel Itanium 9150M
CPU Characteristics:	667MHz FSB
CPU MHz:	1669
FPU:	Integrated
CPU(s) enabled:	128 cores, 64 chips, 2 cores/chip
CPU(s) orderable:	8 to 512 blades with 2 chips per blade
Primary Cache:	16 KB I + 16 KB D on chip per core
Secondary Cache:	1 MB I + 256 KB D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 10 (ia64) SP1, Kernel 2.6.16.54-0.2.5-default
Compiler:	Intel Fortran Compiler for Linux 10.1 (Build 20071005) Intel C++ Compiler for Linux 10.1 (Build 20071005)
Auto Parallel:	No
File System:	xfs
System State:	Multi-user

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L3 Cache: 12 MB I+D on chip per core
Other Cache: None
Memory: 256 GB (8*1GB DDR2-400 DIMMS per 4 core module)
Disk Subsystem: 2.4 TB RAID 4+1
32 x 73 GB SCSI (Seagate Cheetah 15k rpm)
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: SGI ProPack 5 Service Pack 4

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	128	1347	1290	1331	1310	**1335**	**1300**	128	**1289**	**1350**	1292	1350	1285	1350
416.gamess	128	1982	1260	1984	1260	**1984**	**1260**	128	**1786**	**1400**	1787	1400	1783	1410
433.milc	128	1908	616	**1908**	**616**	1891	622	128	**1853**	**634**	1874	627	1773	663
434.zeusmp	128	856	1360	888	1310	**873**	**1330**	128	**837**	**1390**	843	1380	836	1390
435.gromacs	128	517	1770	**517**	**1770**	520	1760	128	482	1900	484	1890	**483**	**1890**
436.cactusADM	128	**478**	**3200**	477	3210	478	3200	128	476	3210	479	3200	**477**	**3210**
437.leslie3d	128	1334	902	**1320**	**912**	1299	926	128	1293	931	**1284**	**937**	1257	957
444.namd	128	**336**	**3050**	336	3050	336	3050	128	**290**	**3540**	291	3530	289	3550
447.dealII	128	890	1650	888	1650	**889**	**1650**	128	850	1720	841	1740	**846**	**1730**
450.soplex	128	1152	927	**1146**	**931**	1146	932	128	**1099**	**972**	1139	938	1097	973
453.povray	128	560	1220	560	1220	**560**	**1220**	128	**482**	**1410**	483	1410	482	1410
454.calculix	128	534	1980	535	1970	**535**	**1970**	128	515	2050	**514**	**2050**	514	2050
459.GemsFDTD	128	1937	701	**1932**	**703**	1917	708	128	1879	723	1899	715	**1897**	**716**
465.tonto	128	831	1520	**829**	**1520**	828	1520	128	764	1650	**762**	**1650**	761	1660
470.lbm	128	**1045**	**1680**	1051	1670	1043	1690	128	1045	1680	1057	1660	**1045**	**1680**
481.wrf	128	893	1600	880	1630	**891**	**1610**	128	884	1620	877	1630	**878**	**1630**
482.sphinx3	128	**904**	**2760**	895	2790	907	2750	128	820	3040	813	3070	**819**	**3050**

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

General Notes

```
Processes were bound to CPUs using dplace.
limit stacksize unlimited
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

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Base Compiler Invocation (Continued)

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_LINUX -DSPEC_CPU_LINUX64_IPF
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -ansi-alias

C++ benchmarks:
-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -ansi-alias

Fortran benchmarks:
-fast -IPF-fp-relaxed -opt-prefetch-next-iteration

Benchmarks using both Fortran and C:
-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -ansi-alias

Peak Compiler Invocation

C benchmarks:
icc

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Peak Compiler Invocation (Continued)

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -fno-alias -ansi-alias

470.lbm: -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -ansi-alias

482.sphinx3: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -fno-alias -no-opt-prefetch-initial-values -ansi-alias

C++ benchmarks:

444.namd: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-prefetch -auto-ilp32 -fno-alias -ansi-alias

447.dealII: -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -inline-factor=150 -no-alias-args -no-opt-loadpair -ansi-alias

450.soplex: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -auto-ilp32 -no-alias-args -ansi-alias

453.povray: -prof_gen(pass 1) -prof_use(pass 2) -fast -IPF-fp-relaxed -opt-prefetch-next-iteration -inline-factor=150 -ansi-alias

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

410.bwaves: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration`

416.gamess: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-prefetch`

434.zeusmp: `Same as 410.bwaves`

437.leslie3d: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-opt-loadpair`

459.GemsFDTD: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration`

465.tonto: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -inline-factor=150 -no-prefetch`

Benchmarks using both Fortran and C:

435.gromacs: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-prefetch -fno-alias -ansi-alias`

436.cactusADM: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -ansi-alias`

454.calculix: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -inline-factor=150 -no-opt-prefetch-initial-values -ansi-alias`

481.wrf: `-fast -IPF-fp-relaxed -opt-prefetch-next-iteration -no-opt-loadpair -ansi-alias`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.xml`

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