SPEC® CFP2006 Result

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SGI

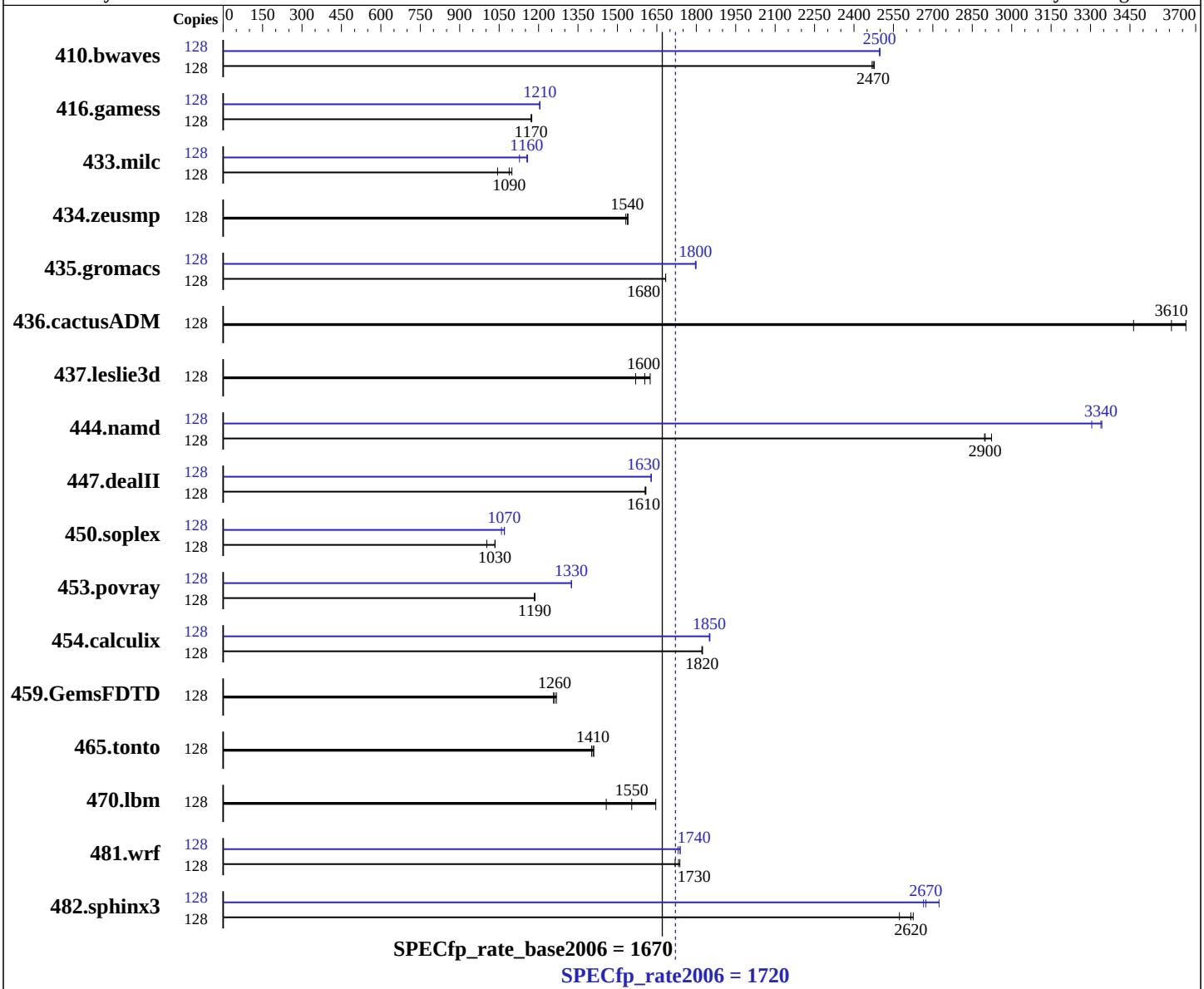
SGI Altix 4700 Bandwidth System (Itanium 2 Processor 9050 1.6GHz/24M)

SPECfp®_rate2006 = 1720

SPECfp_rate_base2006 = 1670

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

Test date: Oct-2006
Hardware Availability: Jul-2006
Software Availability: Aug-2006



Hardware

CPU Name:	Dual-Core Intel Itanium 2 9050
CPU Characteristics:	533MHz FSB
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	128 cores, 64 chips, 2 cores/chip
CPU(s) orderable:	2-1024 cores
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 9 Service Pack 3 + SGI ProPack v4.0 Service Pack 3
Compiler:	Intel Fortran Compiler for Linux 9.1 (Build 20060818) Intel C++ Compiler for Linux 9.1 (Build 20060818)
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: 512 GB (8*1GB DDR2-400 DIMMS per 2 core module)
Disk Subsystem: 16 x 37 GB FibreChannel (Seagate Cheetah 15k rpm)
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	128	705	2470	**703**	**2470**	702	2480	128	**696**	**2500**	696	2500	697	2500
416.gamess	128	**2138**	**1170**	2138	1170	2134	1170	128	**2079**	**1210**	2078	1210	2082	1200
433.milc	128	1125	1040	**1080**	**1090**	1070	1100	128	1042	1130	1014	1160	**1017**	**1160**
434.zeusmp	128	760	1530	756	1540	**757**	**1540**	128	760	1530	756	1540	**757**	**1540**
435.gromacs	128	543	1680	543	1680	**543**	**1680**	128	**508**	**1800**	508	1800	509	1800
436.cactusADM	128	442	3460	**424**	**3610**	418	3660	128	442	3460	**424**	**3610**	418	3660
437.leslie3d	128	767	1570	741	1620	**750**	**1600**	128	767	1570	741	1620	**750**	**1600**
444.namd	128	354	2900	351	2920	**354**	**2900**	128	**307**	**3340**	307	3340	311	3300
447.dealII	128	912	1610	910	1610	**911**	**1610**	128	899	1630	**899**	**1630**	899	1630
450.soplex	128	**1033**	**1030**	1032	1030	1064	1000	128	1008	1060	**998**	**1070**	997	1070
453.povray	128	574	1190	575	1180	**574**	**1190**	128	**514**	**1330**	514	1330	514	1330
454.calculix	128	579	1820	**579**	**1820**	580	1820	128	571	1850	**571**	**1850**	570	1850
459.GemsFDTD	128	**1077**	**1260**	1071	1270	1081	1260	128	**1077**	**1260**	1071	1270	1081	1260
465.tonto	128	898	1400	893	1410	**895**	**1410**	128	898	1400	893	1410	**895**	**1410**
470.lbm	128	1207	1460	**1131**	**1550**	1069	1650	128	1207	1460	**1131**	**1550**	1069	1650
481.wrf	128	831	1720	823	1740	**825**	**1730**	128	826	1730	822	1740	**823**	**1740**
482.sphinx3	128	950	2630	**954**	**2620**	970	2570	128	**933**	**2670**	936	2660	916	2720

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

General Notes

```
 Extra cores disabled at firmware.
 Processes were bound to CPUs using dplace.
 limit stacksize unlimited
 kernel 2.6.5-7.276-64k-pagesize

Submitted_by: jbaron@sgi.com
Submitted: Mon Oct 30 13:46:54 2006
Submission: cpu2006-20061016-00118.sub
```

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_LINUX -DSPEC_CPU_CASE_FLAG
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast -IPF_fp_relaxed -ansi_alias

C++ benchmarks:
-fast -IPF_fp_relaxed -ansi_alias

Fortran benchmarks:
-fast -IPF_fp_relaxed

Benchmarks using both Fortran and C:
-fast -IPF_fp_relaxed -ansi_alias

Base Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

Fortran benchmarks:
`-w`

Benchmarks using both Fortran and C:
`-w`

Peak Compiler Invocation

C benchmarks:
`icc`

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 -fno-alias -ansi_alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF_fp_relaxed -ansi_alias`

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

444.namd: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF_fp_relaxed -no-prefetch -auto_ilp32 -fno-alias -ansi_alias`

447.dealII: `-fast -IPF_fp_relaxed -auto_ilp32 -no-alias-args -ansi_alias`

450.soplex: `-fast -IPF_fp_relaxed -auto_ilp32 -inline-factor=150 -ansi_alias`

453.povray: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF_fp_relaxed -ansi_alias`

Fortran benchmarks:

410.bwaves: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF_fp_relaxed`

416.gamess: `-fast -IPF_fp_relaxed -inline-factor=150`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `basepeak = yes`

465.tonto: `basepeak = yes`

Benchmarks using both Fortran and C:

435.gromacs: `-prof_gen`(pass 1) `-prof_use`(pass 2) `-fast -IPF_fp_relaxed -fno-alias -inline-factor=150 -ansi_alias`

436.cactusADM: `basepeak = yes`

454.calculix: `-fast -IPF_fp_relaxed -fno-alias -ansi_alias`

481.wrf: `-fast -IPF_fp_relaxed -ansi_alias`

Peak Other Flags

C benchmarks:
`-w`

C++ benchmarks:
`-w`

Fortran benchmarks:
`-w`

Continued on next page

Peak Other Flags (Continued)

Benchmarks using both Fortran and C:
`-w`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.20090715.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic91-ipf.20090715.xml`

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