SPEC® CFP2006 Result
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SGI

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

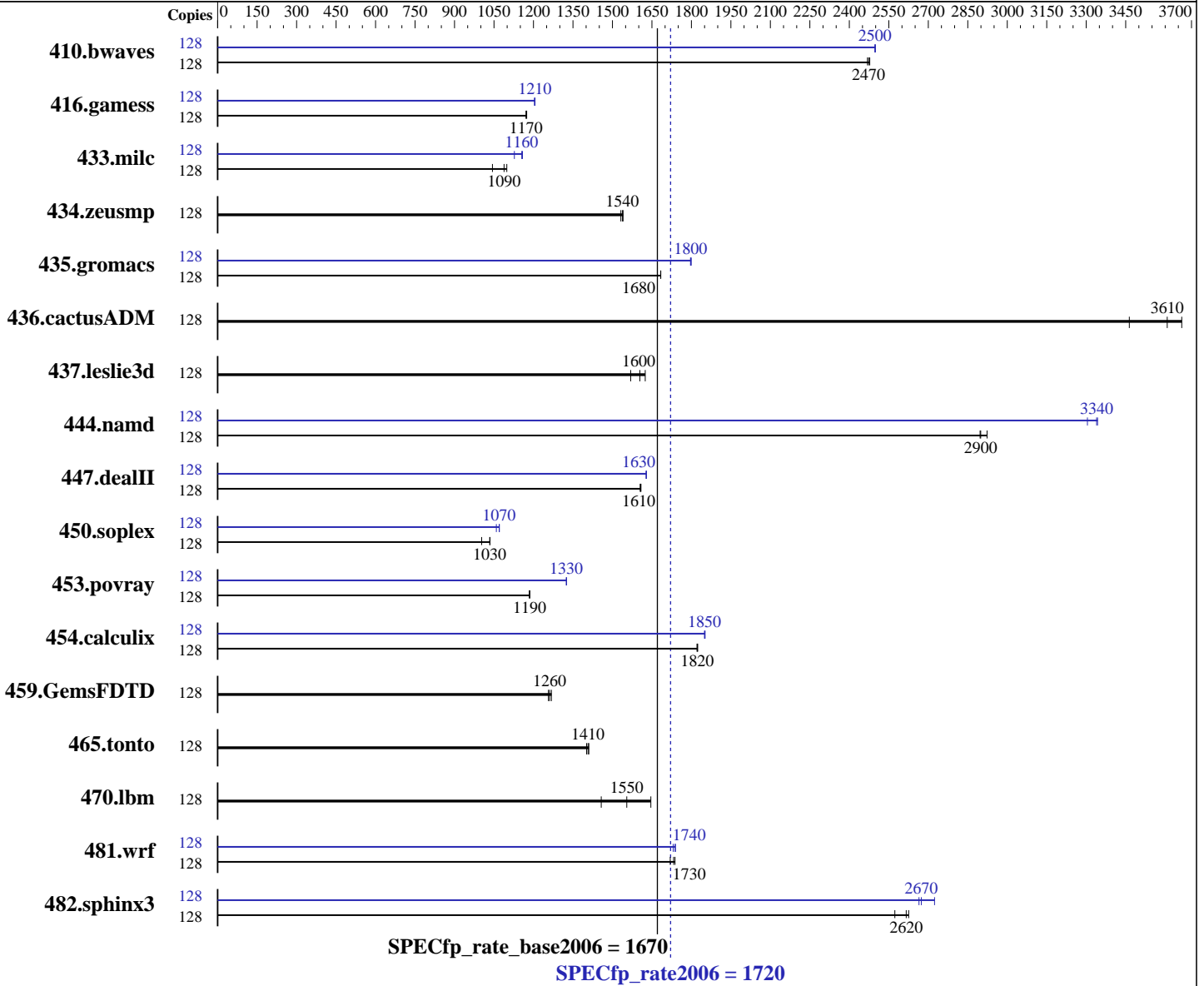$SPECfp^{®}_rate2006 = $ 1720

$SPECfp_rate_base2006 = $ 1670

CPU2006 license: 4	**Test date:** Oct-2006
Test sponsor: SGI	**Hardware Availability:** Jul-2006
Tested by: SGI	**Software Availability:** Aug-2006

Copies 0 150 300 450 600 750 900 1050 1200 1350 1500 1650 1800 1950 2100 2250 2400 2550 2700 2850 3000 3150 3300 3450 3700

- **410.bwaves** 128 — 2500; 128 — 2470
- **416.gamess** 128 — 1210; 128 — 1170
- **433.milc** 128 — 1160; 128 — 1090
- **434.zeusmp** 128 — 1540
- **435.gromacs** 128 — 1800; 128 — 1680
- **436.cactusADM** 128 — 3610
- **437.leslie3d** 128 — 1600
- **444.namd** 128 — 3340; 128 — 2900
- **447.dealII** 128 — 1630; 128 — 1610
- **450.soplex** 128 — 1070; 128 — 1030
- **453.povray** 128 — 1330; 128 — 1190
- **454.calculix** 128 — 1850; 128 — 1820
- **459.GemsFDTD** 128 — 1260
- **465.tonto** 128 — 1410
- **470.lbm** 128 — 1550
- **481.wrf** 128 — 1740; 128 — 1730
- **482.sphinx3** 128 — 2670; 128 — 2620

SPECfp_rate_base2006 = 1670

SPECfp_rate2006 = 1720

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

Continued on next page

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

Continued on next page

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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	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak 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
```

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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_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

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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:

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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
```

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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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For other inquiries, please contact webmaster@spec.org.

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