SPEC® CFP2006 Result

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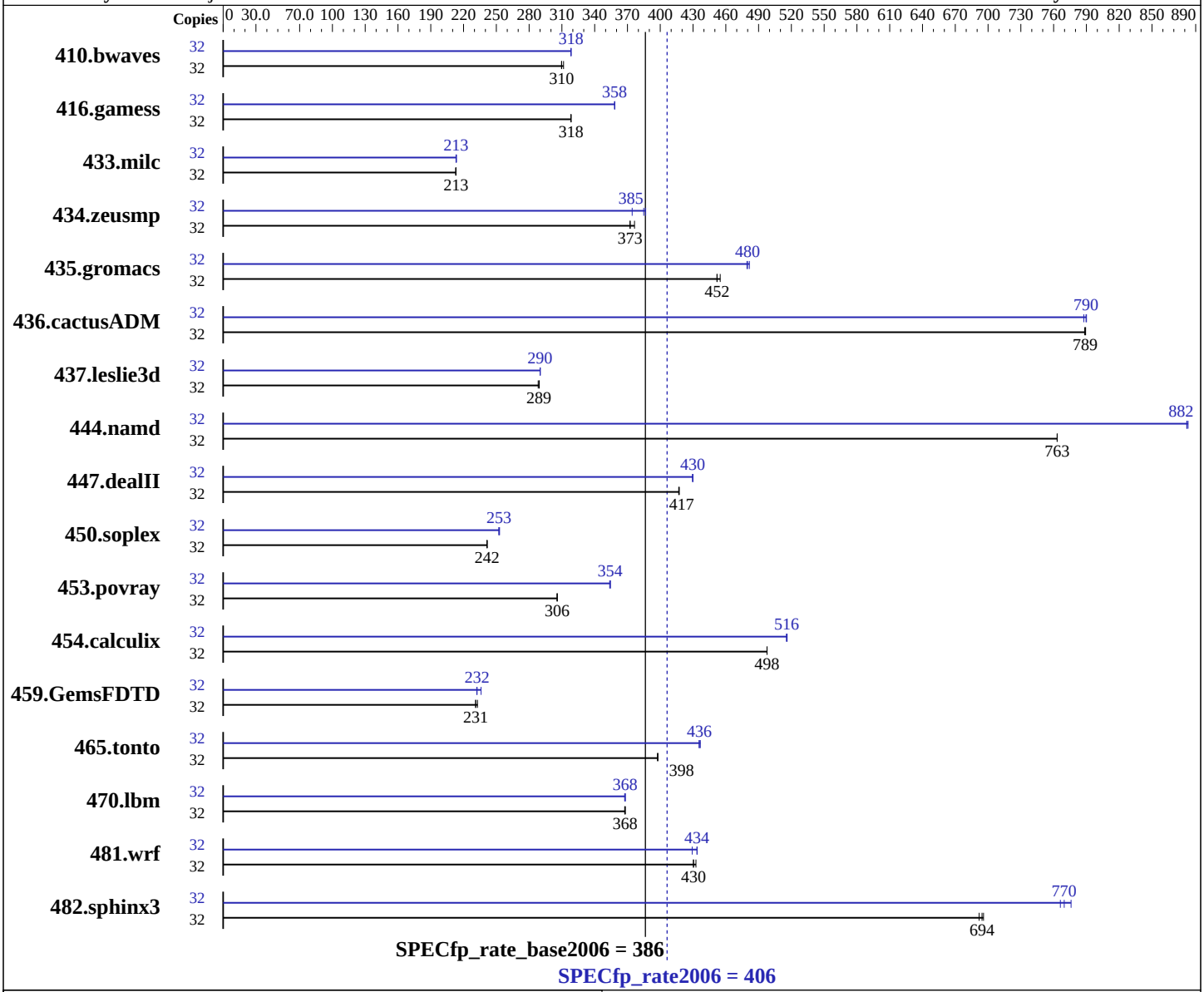
Fujitsu Limited
PRIMEQUEST 540A

SPECfp®_rate2006 = 406

SPECfp_rate_base2006 = 386

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Fujitsu Limited

Test date: Mar-2008
Hardware Availability: May-2008
Software Availability: Feb-2008



Hardware

CPU Name:	Dual-Core Intel Itanium 9150M
CPU Characteristics:	1.66GHz/24MB, 667MHz FSB
CPU MHz:	1667
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip
CPU(s) orderable:	2-16 chips
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:	Red Hat Enterprise Linux 5.1, Kernel 2.6.18-53.el5 on an ia64
Compiler:	Intel C++ Compiler for Linux 10.1 (Build 20080112) Intel Fortran Compiler for Linux 10.1 (Build 20080112)
Auto Parallel:	No
File System:	ext2

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L3 Cache: 12 MB I+D on chip per core
Other Cache: None
Memory: 256 GB (128 x 2GB DDR2-667 DIMMs)
Disk Subsystem: 2 x 147GB (SCSI Ultra 320, 10000rpm)
No RAID configuration
Other Hardware: None

System State: Runlevel 1 (single user mode)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	**1404**	**310**	1404	310	1396	312	32	1366	318	1366	318	**1366**	**318**
416.gamess	32	1968	318	**1968**	**318**	1968	318	32	**1749**	**358**	1748	358	1749	358
433.milc	32	1378	213	**1378**	**213**	1381	213	32	1379	213	1375	214	**1378**	**213**
434.zeusmp	32	774	376	782	372	**782**	**373**	32	753	387	**757**	**385**	778	374
435.gromacs	32	502	455	**505**	**452**	506	452	32	477	479	**476**	**480**	474	482
436.cactusADM	32	484	789	485	788	**485**	**789**	32	486	788	**484**	**790**	484	790
437.leslie3d	32	1043	288	1040	289	**1041**	**289**	32	1037	290	**1037**	**290**	1037	290
444.namd	32	336	763	**336**	**763**	336	763	32	291	883	291	882	**291**	**882**
447.dealII	32	877	417	**877**	**417**	878	417	32	852	430	851	430	**852**	**430**
450.soplex	32	1106	241	1104	242	**1105**	**242**	32	**1057**	**253**	1055	253	1058	252
453.povray	32	557	306	557	306	**557**	**306**	32	481	354	480	354	**481**	**354**
454.calculix	32	**530**	**498**	530	498	530	498	32	512	515	511	516	**512**	**516**
459.GemsFDTD	32	1469	231	1459	233	**1469**	**231**	32	**1461**	**232**	1463	232	1438	236
465.tonto	32	**792**	**398**	791	398	792	398	32	721	437	723	436	**722**	**436**
470.lbm	32	1195	368	**1195**	**368**	1197	367	32	1195	368	**1195**	**368**	1197	367
481.wrf	32	831	430	826	433	**830**	**430**	32	**824**	**434**	824	434	833	429
482.sphinx3	32	896	696	901	692	**898**	**694**	32	804	776	814	766	**810**	**770**

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

General Notes

```
Processes are bound to CPUs using taskset.

limit stacksize unlimited

Memory system is in "Non Mirror Mode".

The following 2 environment variables were set
    MALLOC_MMAP_MAX_=0
    MALLOC_TRIM_THRESHOLD_=-1
This will cause use of sbrk() calls instead of
mmap() calls to get memory from the system.
```

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 -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
-IPF-fp-relaxed

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 -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

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Peak Optimization Flags (Continued)

Fortran benchmarks:

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/Fujitsu.PQ580A.ipf.linux.flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Fujitsu.PQ580A.ipf.linux.flags.xml

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

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 18:36:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 April 2008.