SPEC® CFP2006 Result

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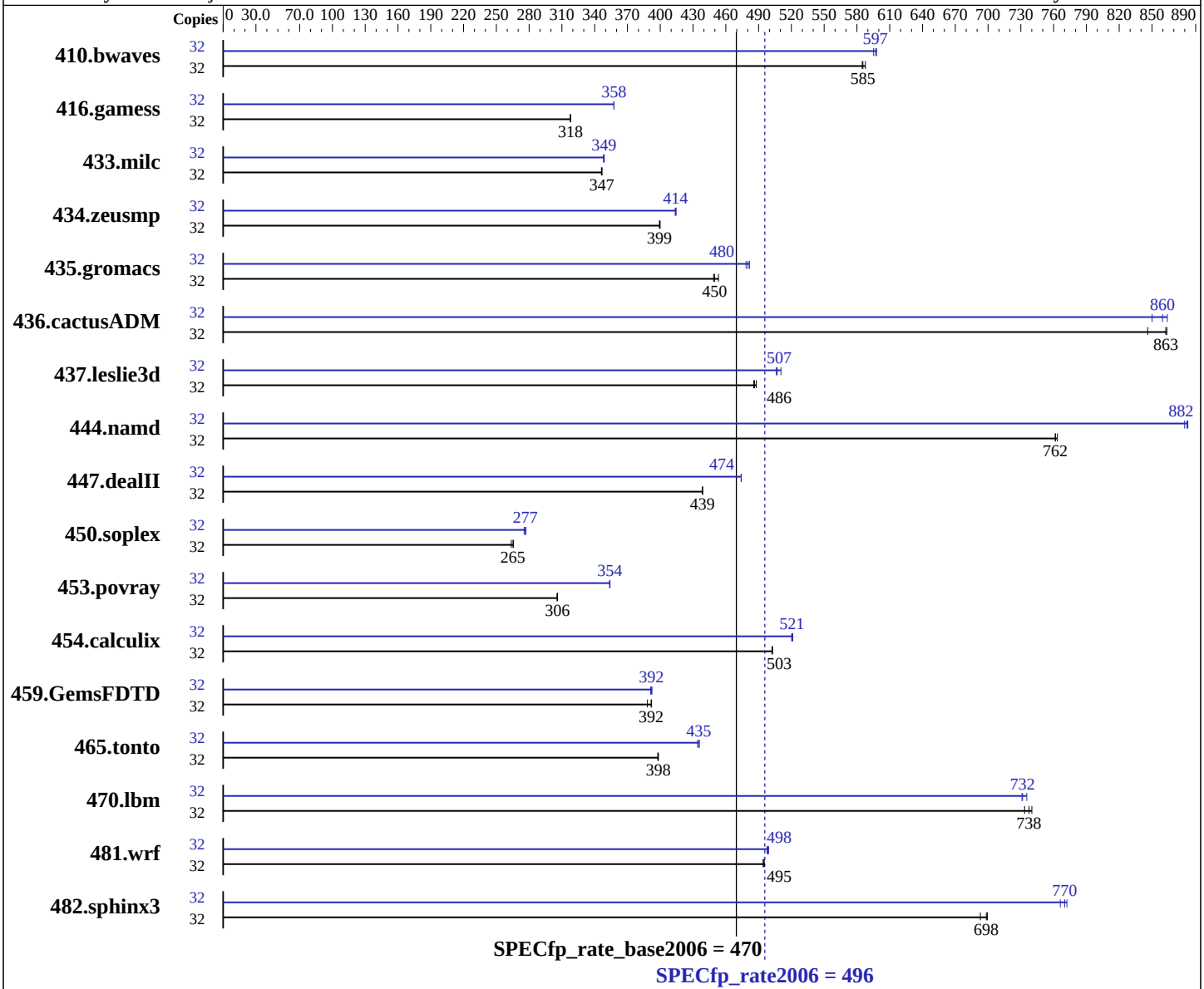
Fujitsu Limited
PRIMEQUEST 580A

SPECfp®_rate2006 = 496

SPECfp_rate_base2006 = 470

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:	2-32 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: 512 GB (256 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	740	588	**743**	**585**	744	585	32	731	595	**728**	**597**	727	598
416.gamess	32	1971	318	1971	318	**1971**	**318**	32	1752	358	**1752**	**358**	1752	358
433.milc	32	847	347	849	346	**848**	**347**	32	842	349	**843**	**349**	844	348
434.zeusmp	32	728	400	729	399	**729**	**399**	32	704	414	703	414	**703**	**414**
435.gromacs	32	509	449	504	453	**508**	**450**	32	474	482	**476**	**480**	477	479
436.cactusADM	32	443	864	**443**	**863**	452	846	32	**445**	**860**	450	850	443	864
437.leslie3d	32	619	486	617	488	**619**	**486**	32	589	510	**593**	**507**	594	506
444.namd	32	**337**	**762**	337	762	336	763	32	**291**	**882**	292	880	291	883
447.dealII	32	834	439	**835**	**439**	835	439	32	**772**	**474**	772	474	772	474
450.soplex	32	1004	266	1012	264	**1006**	**265**	32	963	277	**965**	**277**	969	275
453.povray	32	557	305	**556**	**306**	556	306	32	481	354	481	354	**481**	**354**
454.calculix	32	525	503	**525**	**503**	526	502	32	506	521	507	520	**507**	**521**
459.GemsFDTD	32	**867**	**392**	866	392	874	388	32	868	391	**866**	**392**	865	392
465.tonto	32	**791**	**398**	791	398	792	398	32	723	436	**723**	**435**	725	434
470.lbm	32	594	740	**596**	**738**	599	733	32	598	735	601	731	**601**	**732**
481.wrf	32	722	495	723	494	**722**	**495**	32	716	499	**717**	**498**	718	498
482.sphinx3	32	**893**	**698**	900	693	892	699	32	808	772	**810**	**770**	814	766

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.
```

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General Notes (Continued)

```
Only one CPU is installed per FSB,
instead of maximum two CPUs.
```

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

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Base Optimization Flags (Continued)

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`

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Peak Optimization Flags (Continued)

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:

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.20090713.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.20090713.xml`

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

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