SPEC® CFP2006 Result

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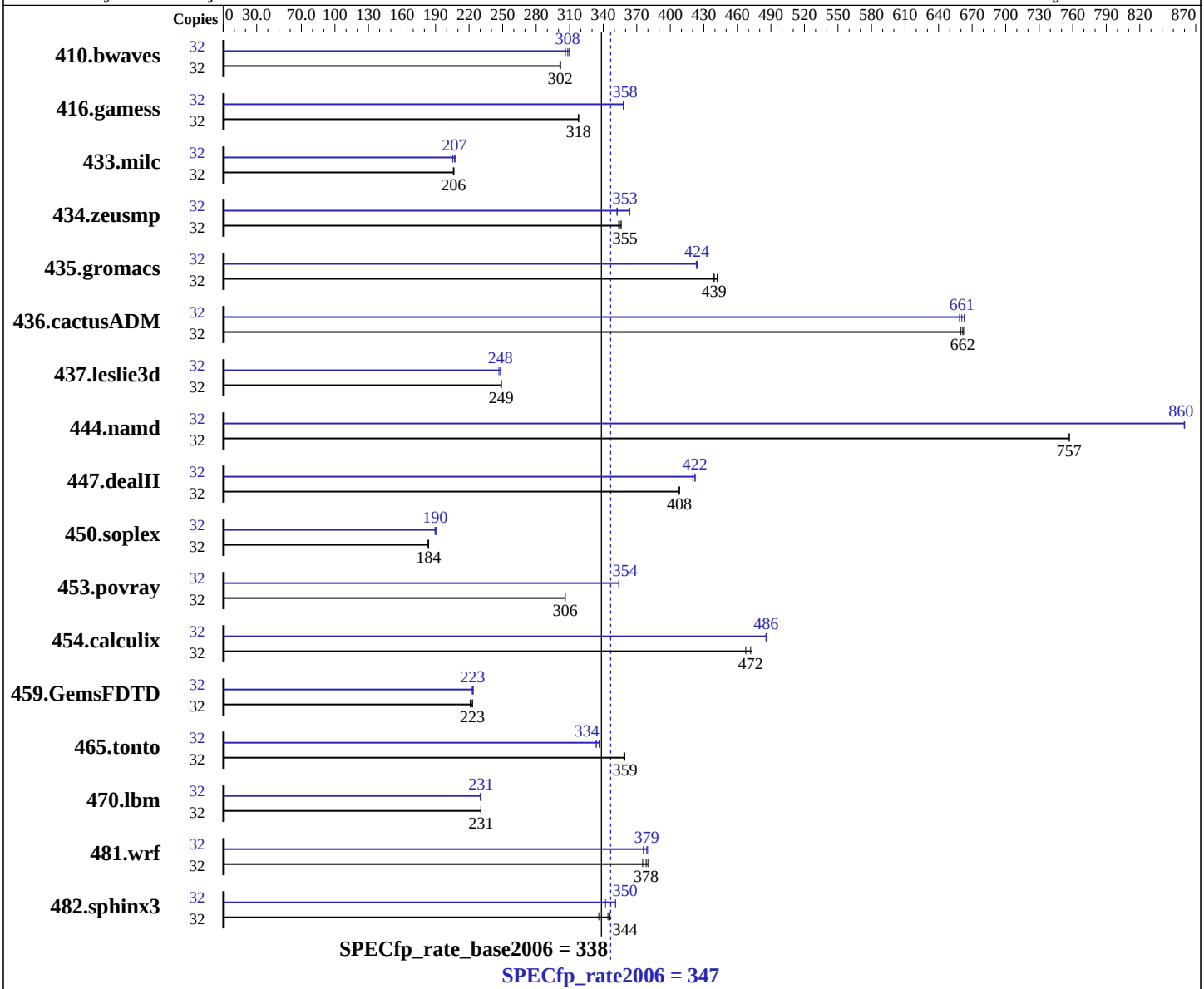
Fujitsu Limited
PRIMEQUEST 540A

SPECfp®_rate2006 = 347

SPECfp_rate_base2006 = 338

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 9130M
CPU Characteristics:	1.66GHz/8MB, 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: 4 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	1444	301	1441	302	**1442**	**302**	32	1420	306	1406	309	**1411**	**308**
416.gamess	32	1971	318	1971	318	**1971**	**318**	32	**1751**	**358**	1751	358	1750	358
433.milc	32	**1425**	**206**	1423	206	1427	206	32	1431	205	**1421**	**207**	1414	208
434.zeusmp	32	818	356	823	354	**820**	**355**	32	827	352	801	364	**826**	**353**
435.gromacs	32	**520**	**439**	517	442	520	439	32	540	423	**539**	**424**	538	424
436.cactusADM	32	579	660	**578**	**662**	577	662	32	577	663	**579**	**661**	581	659
437.leslie3d	32	**1210**	**249**	1209	249	1210	249	32	1210	249	**1213**	**248**	1219	247
444.namd	32	339	757	339	756	**339**	**757**	32	298	860	**298**	**860**	298	860
447.dealII	32	897	408	**897**	**408**	898	408	32	871	420	**867**	**422**	867	422
450.soplex	32	1456	183	1452	184	**1453**	**184**	32	1408	190	**1405**	**190**	1402	190
453.povray	32	556	306	**556**	**306**	557	306	32	481	354	481	354	**481**	**354**
454.calculix	32	565	468	**559**	**472**	558	473	32	543	487	**544**	**486**	544	486
459.GemsFDTD	32	1537	221	**1523**	**223**	1522	223	32	**1521**	**223**	1517	224	1524	223
465.tonto	32	878	359	876	359	**877**	**359**	32	943	334	936	336	**943**	**334**
470.lbm	32	1907	231	1906	231	**1906**	**231**	32	**1906**	**231**	1906	231	1913	230
481.wrf	32	941	380	952	375	**945**	**378**	32	**943**	**379**	951	376	941	380
482.sphinx3	32	1856	336	1802	346	**1812**	**344**	32	1823	342	1776	351	**1783**	**350**

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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