SPEC® CFP2006 Result

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Fujitsu

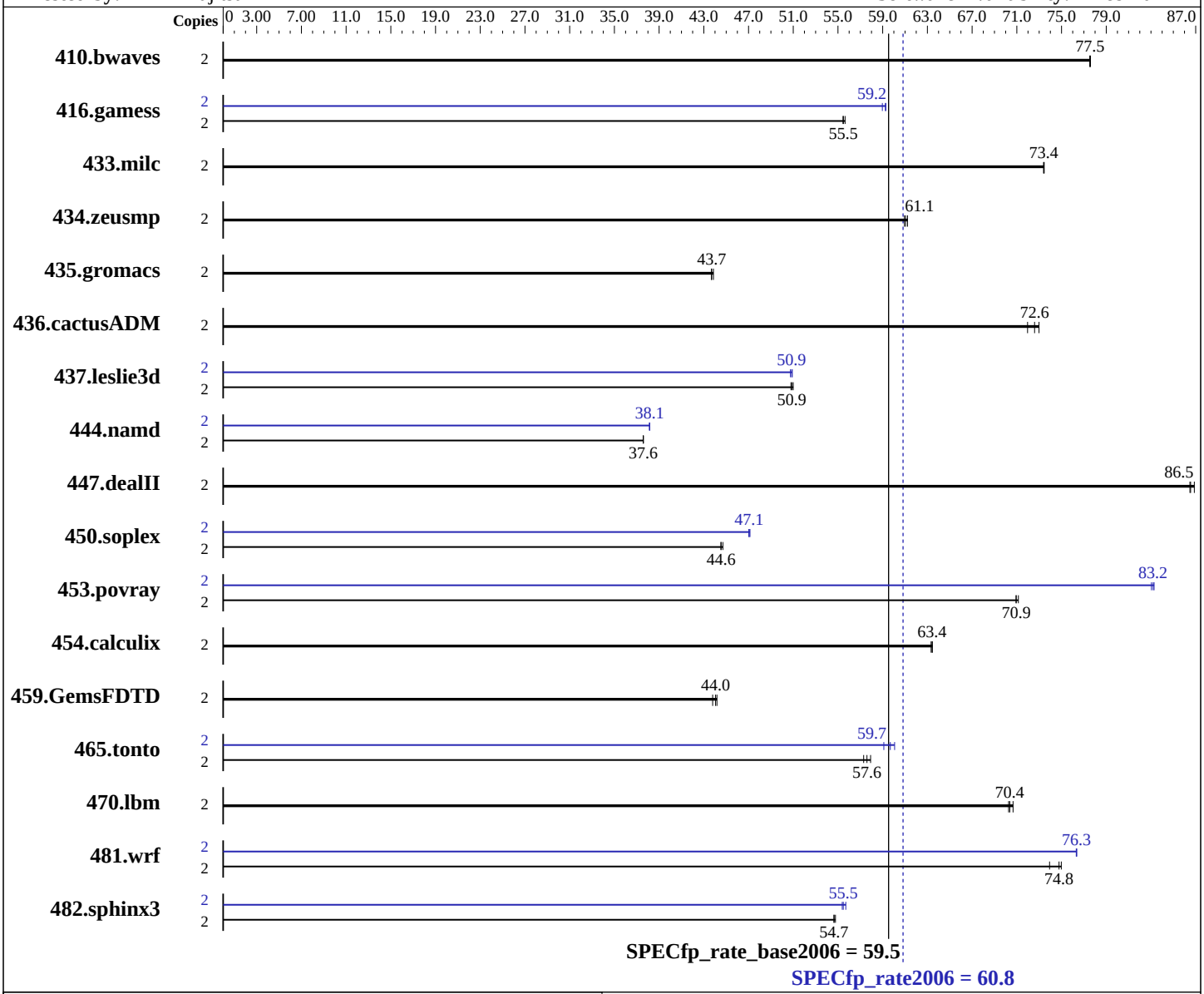
PRIMERGY TX120 S3p, Intel Pentium G640, 2.80 GHz

SPECfp®_rate2006 = 60.8

SPECfp_rate_base2006 = 59.5

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

Test date: Jun-2012
Hardware Availability: Jun-2012
Software Availability: Feb-2012



Hardware

CPU Name:	Intel Pentium G640
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC, running at 1067 MHz and CL7)
Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 32/64-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	2	**351**	**77.5**	350	77.6	351	77.5	2	**351**	**77.5**	350	77.6	351	77.5
416.gamess	2	**706**	**55.5**	706	55.5	704	55.6	2	661	59.3	664	59.0	**661**	**59.2**
433.milc	2	**250**	**73.4**	250	73.4	250	73.4	2	**250**	**73.4**	250	73.4	250	73.4
434.zeusmp	2	**298**	**61.1**	297	61.2	299	60.9	2	**298**	**61.1**	297	61.2	299	60.9
435.gromacs	2	**327**	**43.7**	327	43.7	326	43.9	2	**327**	**43.7**	327	43.7	326	43.9
436.cactusADM	2	**329**	**72.6**	327	73.0	332	72.0	2	**329**	**72.6**	327	73.0	332	72.0
437.leslie3d	2	370	50.8	**370**	**50.9**	369	51.0	2	369	50.9	**370**	**50.9**	370	50.7
444.namd	2	427	37.6	427	37.6	**427**	**37.6**	2	420	38.2	**420**	**38.1**	421	38.1
447.dealII	2	265	86.5	**264**	**86.5**	263	86.9	2	265	86.5	**264**	**86.5**	263	86.9
450.soplex	2	373	44.7	**374**	**44.6**	375	44.5	2	355	47.0	**354**	**47.1**	354	47.1
453.povray	2	**150**	**70.9**	150	70.9	150	71.1	2	128	83.0	**128**	**83.2**	128	83.3
454.calculix	2	261	63.3	**260**	**63.4**	260	63.4	2	261	63.3	**260**	**63.4**	260	63.4
459.GemsFDTD	2	**482**	**44.0**	480	44.2	485	43.8	2	**482**	**44.0**	480	44.2	485	43.8
465.tonto	2	343	57.3	340	57.9	**342**	**57.6**	2	328	60.1	**330**	**59.7**	333	59.1
470.lbm	2	389	70.7	391	70.3	**391**	**70.4**	2	389	70.7	391	70.3	**391**	**70.4**
481.wrf	2	**299**	**74.8**	298	75.0	302	73.9	2	**293**	**76.3**	293	76.3	293	76.4
482.sphinx3	2	712	54.8	**713**	**54.7**	713	54.6	2	704	55.4	700	55.7	**703**	**55.5**

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

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

 Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 For information about Fujitsu please visit: http://www.fujitsu.com
```

Base Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc   -m64 ifort -m64
```

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_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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Base Optimization Flags (Continued)

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Fortran benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32 -ansi-alias -opt-mem-layout-trans=3`

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

Peak 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`
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`

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Peak Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3 -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto -inline-calloc -opt-malloc-options=3

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: `basepeak = yes`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

481.wrf: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml

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