SPEC® CFP2006 Result

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Fujitsu

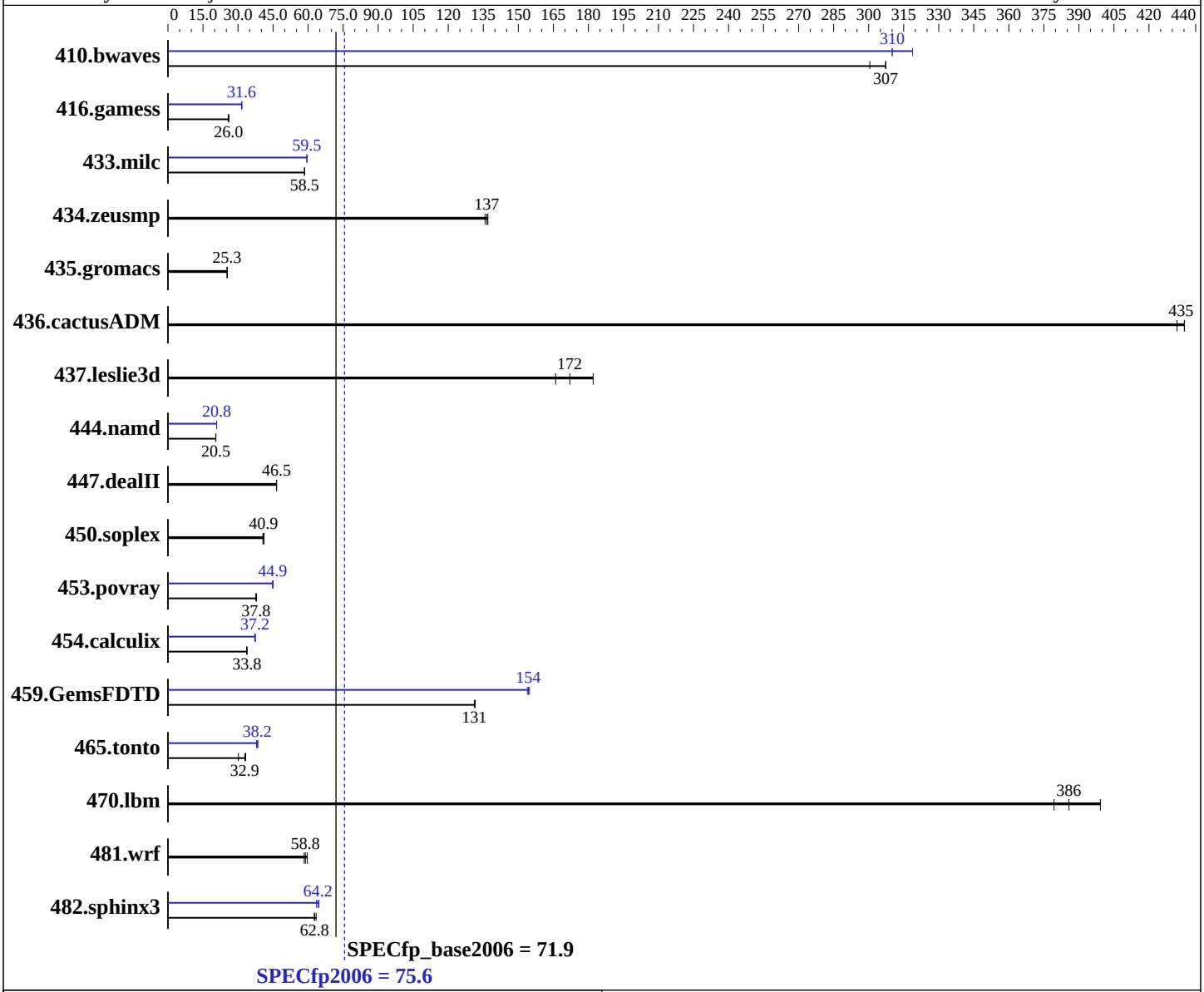
PRIMERGY RX350 S7, Intel Xeon E5-2660, 2.20 GHz

SPECfp®2006 = 75.6

SPECfp_base2006 = 71.9

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

Test date: Jan-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Xeon E5-2660
CPU Characteristics:	Intel Turbo Boost Technology up to 3.0 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	1,2 chips
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 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache:	20 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	45.2	300	44.2	307	**44.2**	**307**	43.8	310	**43.8**	**310**	42.6	319
416.gamess	755	25.9	752	26.0	**754**	**26.0**	619	31.6	620	31.6	**620**	**31.6**
433.milc	157	58.4	157	58.5	**157**	**58.5**	154	59.5	154	59.5	**154**	**59.5**
434.zeusmp	67.0	136	66.4	137	**66.6**	**137**	67.0	136	66.4	137	**66.6**	**137**
435.gromacs	281	25.4	**282**	**25.3**	282	25.3	281	25.4	**282**	**25.3**	282	25.3
436.cactusADM	27.7	432	**27.5**	**435**	27.5	435	27.7	432	**27.5**	**435**	27.5	435
437.leslie3d	**54.6**	**172**	56.6	166	51.6	182	**54.6**	**172**	56.6	166	51.6	182
444.namd	391	20.5	391	20.5	**391**	**20.5**	385	20.8	**385**	**20.8**	385	20.8
447.dealII	**246**	**46.5**	246	46.5	246	46.5	**246**	**46.5**	246	46.5	246	46.5
450.soplex	203	41.1	**204**	**40.9**	205	40.6	203	41.1	**204**	**40.9**	205	40.6
453.povray	140	37.9	141	37.7	**141**	**37.8**	118	45.1	**119**	**44.9**	119	44.8
454.calculix	**244**	**33.8**	245	33.7	244	33.8	**222**	**37.2**	220	37.5	222	37.2
459.GemsFDTD	**80.9**	**131**	80.7	132	80.9	131	**68.7**	**154**	68.5	155	68.9	154
465.tonto	326	30.2	**299**	**32.9**	296	33.3	**257**	**38.2**	255	38.5	260	37.9
470.lbm	34.4	399	**35.6**	**386**	36.2	379	34.4	399	**35.6**	**386**	36.2	379
481.wrf	**190**	**58.8**	187	59.6	191	58.3	**190**	**58.8**	187	59.6	191	58.3
482.sphinx3	307	63.5	311	62.6	**310**	**62.8**	307	63.6	301	64.7	**304**	**64.2**

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

General Notes

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

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General Notes (Continued)

```
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 This result was measured on the PRIMERGY RX350 S7. The PRIMERGY RX350 S7
 and the PRIMERGY TX300 S7 are electronically equivalent.
 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:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

Peak Compiler Invocation

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

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

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

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel -static

416.gamess: -xAVX(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: basepeak = yes

459.GemsFDTD: -xAVX(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 -opt-prefetch -parallel

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

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

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

You can also download the XML flags sources by saving the following links:

`http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml`
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml`

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

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