SPEC® CFP2006 Result

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Fujitsu

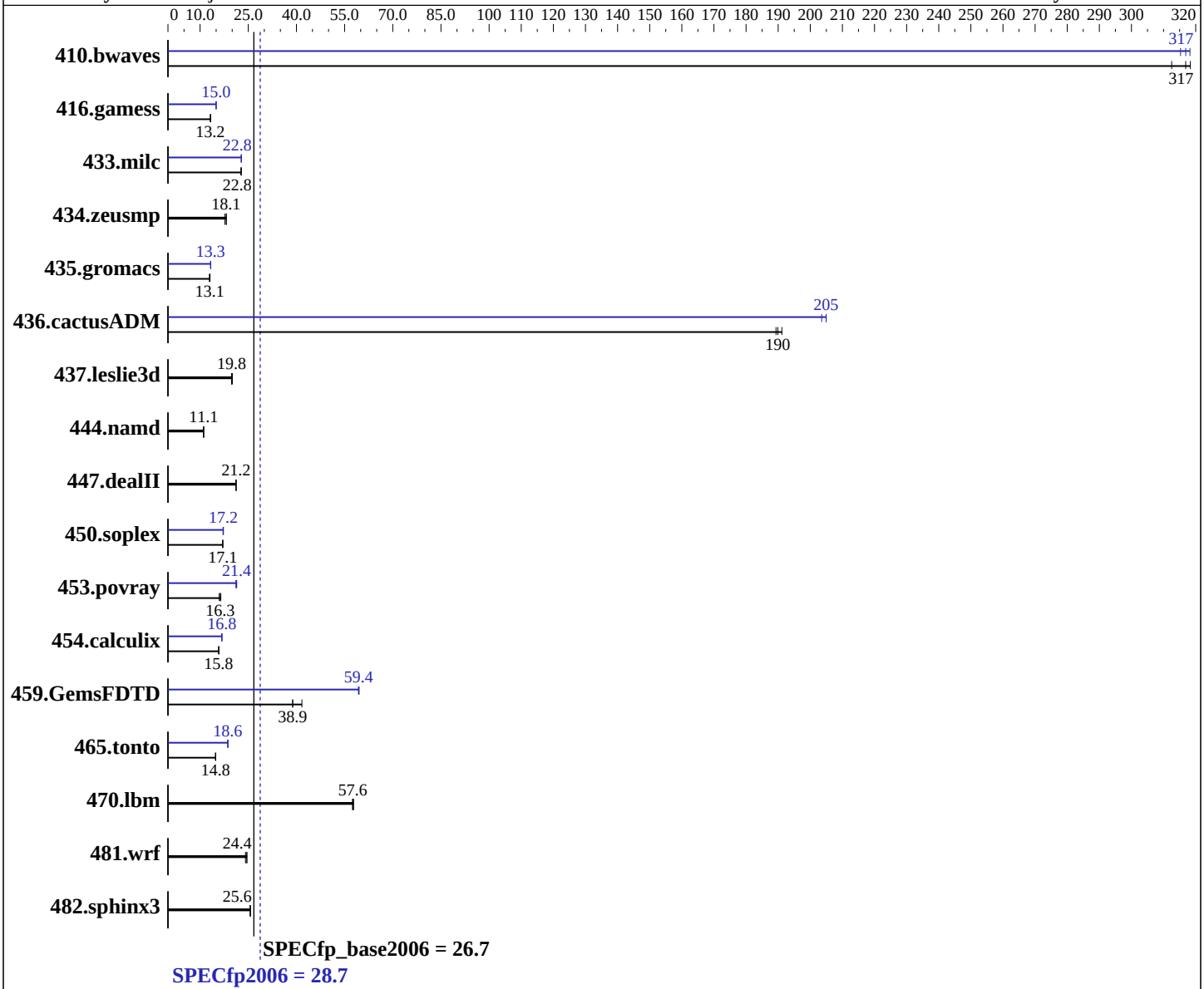
PRIMERGY RX600 S5, Intel Xeon E7520, 1.87 GHz

SPECfp®2006 = 28.7

SPECfp_base2006 = 26.7

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

Test date: Jul-2010
Hardware Availability: Jun-2010
Software Availability: Jan-2010



Hardware

CPU Name:	Intel Xeon E7520
CPU Characteristics:	
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	2,3,4 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:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel:	Yes
File System:	ext3
System State:	Multi-User Run Level 3

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L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (64x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)
Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	43.5	313	42.7	318	**42.9**	**317**	43.1	315	**42.9**	**317**	42.7	318
416.gamess	1478	13.2	1481	13.2	**1479**	**13.2**	**1305**	**15.0**	1305	15.0	1306	15.0
433.milc	**403**	**22.8**	402	22.8	404	22.7	**402**	**22.8**	401	22.9	402	22.8
434.zeusmp	500	18.2	514	17.7	**502**	**18.1**	500	18.2	514	17.7	**502**	**18.1**
435.gromacs	**547**	**13.1**	545	13.1	554	12.9	**537**	**13.3**	536	13.3	538	13.3
436.cactusADM	**62.9**	**190**	62.5	191	63.1	189	58.7	204	58.3	205	**58.3**	**205**
437.leslie3d	469	20.1	**474**	**19.8**	475	19.8	469	20.1	**474**	**19.8**	475	19.8
444.namd	723	11.1	722	11.1	**722**	**11.1**	723	11.1	722	11.1	**722**	**11.1**
447.dealII	539	21.2	540	21.2	**539**	**21.2**	539	21.2	540	21.2	**539**	**21.2**
450.soplex	488	17.1	**488**	**17.1**	490	17.0	486	17.1	483	17.3	**484**	**17.2**
453.povray	323	16.5	333	16.0	**327**	**16.3**	252	21.1	**249**	**21.4**	248	21.4
454.calculix	521	15.8	**521**	**15.8**	523	15.8	492	16.8	**491**	**16.8**	491	16.8
459.GemsFDTD	273	38.8	**273**	**38.9**	254	41.7	**179**	**59.4**	178	59.5	179	59.3
465.tonto	663	14.8	664	14.8	**663**	**14.8**	527	18.7	**528**	**18.6**	529	18.6
470.lbm	239	57.5	**239**	**57.6**	238	57.8	239	57.5	**239**	**57.6**	238	57.8
481.wrf	454	24.6	**458**	**24.4**	463	24.1	454	24.6	**458**	**24.4**	463	24.1
482.sphinx3	**760**	**25.6**	760	25.6	761	25.6	**760**	**25.6**	760	25.6	761	25.6

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

The system automatically configures the memory to run at 800 MHz.
BIOS configuration:
Intel HT Technology = Disable

General Notes

OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M

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General Notes (Continued)

```
For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
```

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 -parallel -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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Base Optimization Flags (Continued)

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

Benchmarks using both Fortran and C:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

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: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

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) `-static`(pass 2) `-prof-use`(pass 2) `-opt-malloc-options=3 -auto-ilp32`

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Peak Optimization Flags (Continued)

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -Ob0 -opt-prefetch -parallel

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

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.xml

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

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