# SPEC® CFP2006 Result



## Fujitsu

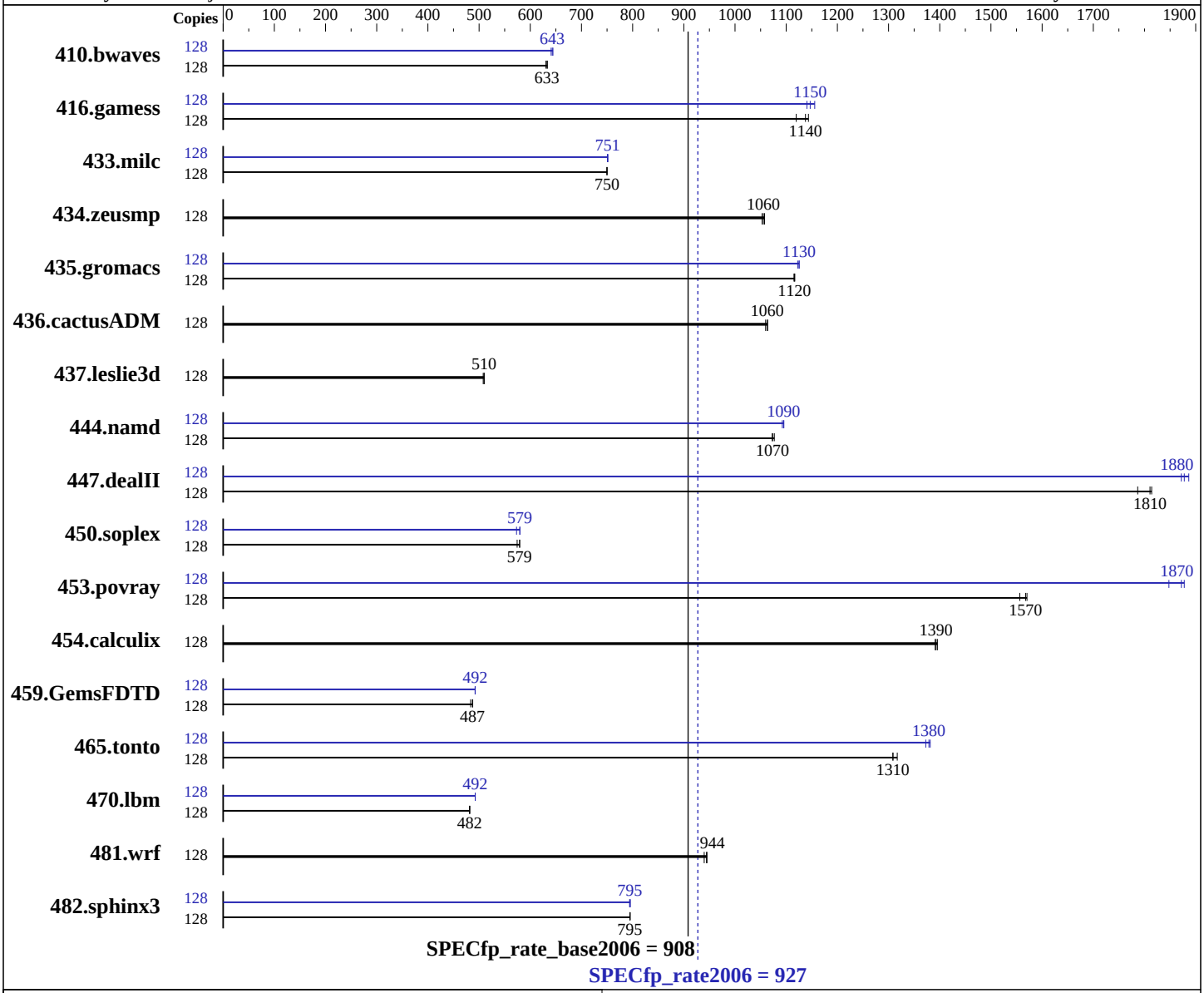
PRIMERGY RX900 S1, Intel Xeon X7560, 2.26 GHz

SPECfp®_rate2006 = 927

SPECfp_rate_base2006 = 908

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

**Test date:** Jul-2010
**Hardware Availability:** Aug-2010
**Software Availability:** Feb-2010




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X7560 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.67 GHz |
| CPU MHz: | 2267 |
| FPU: | Integrated |
| CPU(s) enabled: | 64 cores, 8 chips, 8 cores/chip, 2 threads/core |
| CPU(s) orderable: | 4,6,8 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 20100203 Package ID: l_cproc_p_11.1.069 |
| Auto Parallel: | No |
| File System: | ext2 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |

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L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (128x 8GB DDR3-1066 DIMMs)
Disk Subsystem: 2 x 147 GB (SAS, 15000 RPM, RAID0)
Other Hardware: None

Peak Pointers: 64-bit
Other Software: N/A

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 128 | 2759 | 631 | 2747 | 633 | **2749** | **633** | 128 | **2705** | **643** | 2715 | 641 | 2700 | 644 |
| 416.gamess | 128 | **2203** | **1140** | 2238 | 1120 | 2192 | 1140 | 128 | 2198 | 1140 | 2169 | 1160 | **2185** | **1150** |
| 433.milc | 128 | 1567 | 750 | **1567** | **750** | 1567 | 750 | 128 | 1565 | 751 | 1563 | 752 | **1564** | **751** |
| 434.zeusmp | 128 | 1106 | 1050 | 1101 | 1060 | **1104** | **1060** | 128 | 1106 | 1050 | 1101 | 1060 | **1104** | **1060** |
| 435.gromacs | 128 | **819** | **1120** | 819 | 1120 | 818 | 1120 | 128 | 812 | 1130 | 814 | 1120 | **812** | **1130** |
| 436.cactusADM | 128 | 1443 | 1060 | **1439** | **1060** | 1438 | 1060 | 128 | 1443 | 1060 | **1439** | **1060** | 1438 | 1060 |
| 437.leslie3d | 128 | 2359 | 510 | **2361** | **510** | 2368 | 508 | 128 | 2359 | 510 | **2361** | **510** | 2368 | 508 |
| 444.namd | 128 | **956** | **1070** | 957 | 1070 | 953 | 1080 | 128 | 937 | 1100 | **938** | **1090** | 940 | 1090 |
| 447.dealII | 128 | 807 | 1810 | 820 | 1790 | **809** | **1810** | 128 | **780** | **1880** | 782 | 1870 | 776 | 1890 |
| 450.soplex | 128 | 1859 | 574 | 1842 | 579 | **1843** | **579** | 128 | 1862 | 573 | 1841 | 580 | **1842** | **579** |
| 453.povray | 128 | **434** | **1570** | 434 | 1570 | 438 | 1560 | 128 | **364** | **1870** | 363 | 1880 | 369 | 1850 |
| 454.calculix | 128 | 757 | 1400 | 759 | 1390 | **758** | **1390** | 128 | 757 | 1400 | 759 | 1390 | **758** | **1390** |
| 459.GemsFDTD | 128 | 2785 | 488 | **2789** | **487** | 2809 | 484 | 128 | **2758** | **492** | 2757 | 493 | 2760 | 492 |
| 465.tonto | 128 | **962** | **1310** | 963 | 1310 | 956 | 1320 | 128 | 912 | 1380 | 917 | 1370 | **913** | **1380** |
| 470.lbm | 128 | 3652 | 482 | 3652 | 482 | **3652** | **482** | 128 | 3570 | 493 | **3571** | **492** | 3572 | 492 |
| 481.wrf | 128 | 1513 | 945 | 1521 | 940 | **1514** | **944** | 128 | 1513 | 945 | 1521 | 940 | **1514** | **944** |
| 482.sphinx3 | 128 | **3139** | **795** | 3138 | 795 | 3139 | 795 | 128 | **3139** | **795** | 3136 | 796 | 3142 | 794 |

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

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
The following command was used prior to run

   ulimit -s unlimited
   echo 1 > /proc/sys/vm/zone_reclaim_mode
```

## General Notes

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

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

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

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## Base Optimization Flags (Continued)

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

## 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) `-fno-alias -opt-prefetch`

470.lbm: `-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 -ansi-alias -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

C++ benchmarks:

444.namd: `-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) `-fno-alias -auto-ilp32`

447.dealII: `-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 -ansi-alias -scalar-rep-`

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## Peak Optimization Flags (Continued)

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

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

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

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) -unroll4 -auto -inline-calloc -opt-malloc-options=3

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Fujitsu.RX900.ic11.1-linux64.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Fujitsu.RX900.ic11.1-linux64.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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