



# SPEC® CFP2006 Result

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## Fujitsu

PRIMERGY TX200 S6, Intel Xeon X5650, 2.66 GHz

**SPECfp®\_rate2006 = 123**

**SPECfp\_rate\_base2006 = 119**

CPU2006 license: 19

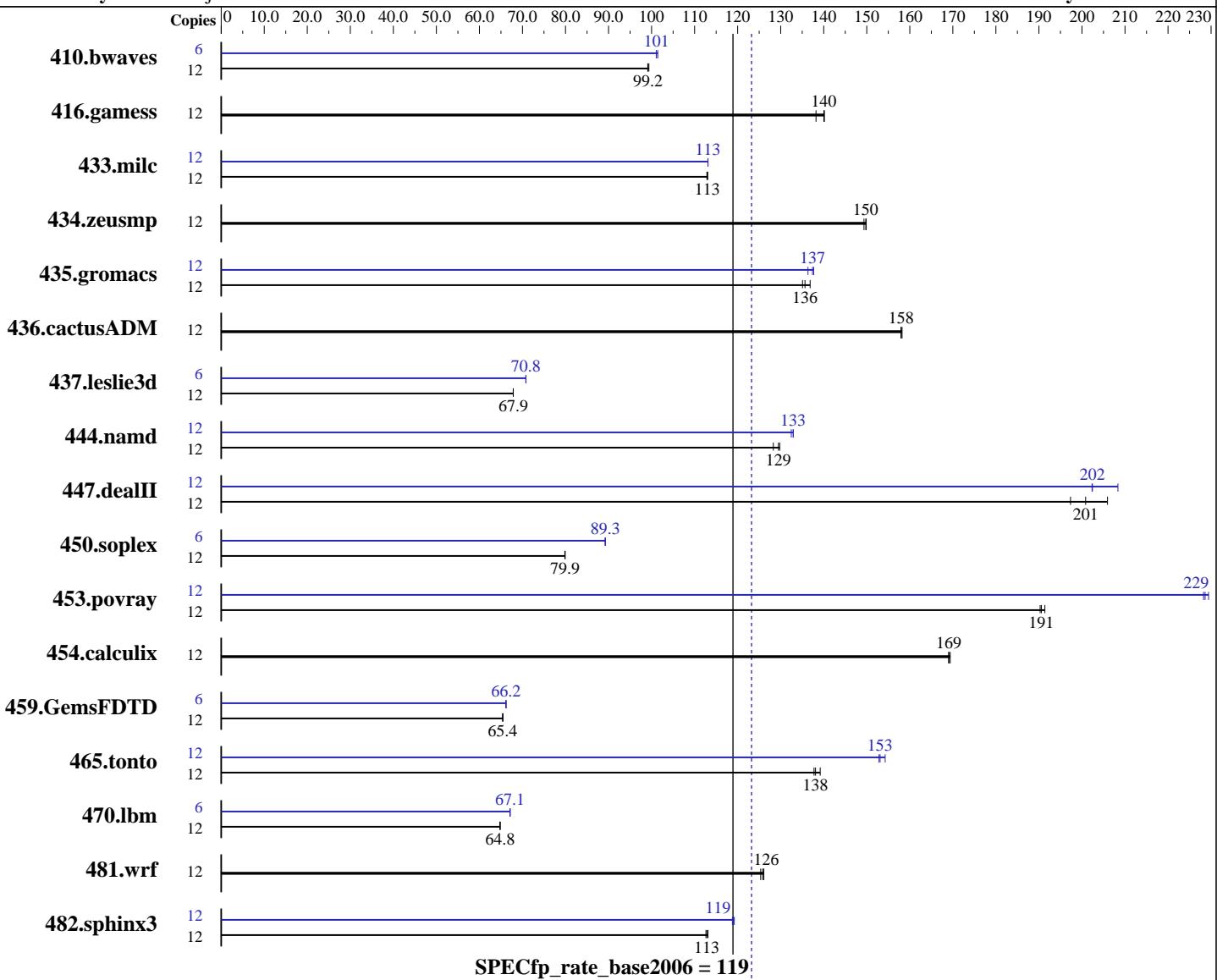
Test date: Sep-2010

Test sponsor: Fujitsu

Hardware Availability: Jul-2010

Tested by: Fujitsu

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon X5650  
CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz  
CPU MHz: 2667  
FPU: Integrated  
CPU(s) enabled: 6 cores, 1 chip, 6 cores/chip, 2 threads/core  
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

### 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: No  
File System: ext3  
System State: Multi-User Run Level 3

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L3 Cache: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 24 GB (6x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)  
 Disk Subsystem: 1 x SATA, 160 GB, 5.4 krpm  
 Other Hardware: None

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    | 12     | 1641        | 99.4        | <b>1645</b> | <b>99.2</b> | 1646        | 99.1        | 6      | <b>806</b>  | <b>101</b>  | 804         | 101         | 807         | 101         |
| 416.gamess    | 12     | <b>1678</b> | <b>140</b>  | 1700        | 138         | 1676        | 140         | 12     | <b>1678</b> | <b>140</b>  | 1700        | 138         | 1676        | 140         |
| 433.milc      | 12     | 976         | 113         | 975         | 113         | <b>975</b>  | <b>113</b>  | 12     | 974         | 113         | <b>974</b>  | <b>113</b>  | 974         | 113         |
| 434.zeusmp    | 12     | <b>729</b>  | <b>150</b>  | 731         | 149         | 729         | 150         | 12     | <b>729</b>  | <b>150</b>  | 731         | 149         | 729         | 150         |
| 435.gromacs   | 12     | <b>632</b>  | <b>136</b>  | 626         | 137         | 634         | 135         | 12     | 628         | 136         | <b>624</b>  | <b>137</b>  | 622         | 138         |
| 436.cactusADM | 12     | <b>908</b>  | <b>158</b>  | 906         | 158         | 908         | 158         | 12     | <b>908</b>  | <b>158</b>  | 906         | 158         | 908         | 158         |
| 437.leslie3d  | 12     | <b>1662</b> | <b>67.9</b> | 1662        | 67.9        | 1663        | 67.8        | 6      | 797         | 70.8        | 796         | 70.8        | <b>797</b>  | <b>70.8</b> |
| 444.namd      | 12     | 750         | 128         | 742         | 130         | <b>743</b>  | <b>129</b>  | 12     | 727         | 132         | 724         | 133         | <b>724</b>  | <b>133</b>  |
| 447.dealII    | 12     | 667         | 206         | 696         | 197         | <b>683</b>  | <b>201</b>  | 12     | 659         | 208         | 678         | 202         | <b>678</b>  | <b>202</b>  |
| 450.soplex    | 12     | 1252        | 79.9        | 1253        | 79.8        | <b>1253</b> | <b>79.9</b> | 6      | <b>561</b>  | <b>89.3</b> | 561         | 89.3        | 561         | 89.2        |
| 453.povray    | 12     | 334         | 191         | <b>335</b>  | <b>191</b>  | 335         | 190         | 12     | 280         | 228         | <b>279</b>  | <b>229</b>  | 278         | 229         |
| 454.calculix  | 12     | <b>586</b>  | <b>169</b>  | 584         | 169         | 586         | 169         | 12     | <b>586</b>  | <b>169</b>  | 584         | 169         | 586         | 169         |
| 459.GemsFDTD  | 12     | 1947        | 65.4        | 1946        | 65.4        | <b>1946</b> | <b>65.4</b> | 6      | 962         | 66.2        | 962         | 66.1        | <b>962</b>  | <b>66.2</b> |
| 465.tonto     | 12     | 848         | 139         | 857         | 138         | <b>855</b>  | <b>138</b>  | 12     | 765         | 154         | <b>771</b>  | <b>153</b>  | 773         | 153         |
| 470.lbm       | 12     | 2545        | 64.8        | 2545        | 64.8        | <b>2545</b> | <b>64.8</b> | 6      | 1229        | 67.1        | <b>1228</b> | <b>67.1</b> | 1228        | 67.1        |
| 481.wrf       | 12     | 1063        | 126         | 1069        | 125         | <b>1065</b> | <b>126</b>  | 12     | 1063        | 126         | 1069        | 125         | <b>1065</b> | <b>126</b>  |
| 482.sphinx3   | 12     | 2068        | 113         | <b>2073</b> | <b>113</b>  | 2077        | 113         | 12     | <b>1962</b> | <b>119</b>  | 1969        | 119         | <b>1967</b> | <b>119</b>  |

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

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

## Platform Notes

BIOS configuration:  
 Data Reuse Optimization = Disable



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## 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 (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  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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## Peak Optimization Flags (Continued)

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-

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: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xsse4 .2 -ipo -O3 -no-prec-div -static

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

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## Peak Optimization Flags (Continued)

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/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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