# SPEC® CFP2006 Result
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## Fujitsu

PRIMERGY BX924 S2, Intel Xeon X5650, 2.67 GHz

$SPECfp^{®}\_rate2006 = $ 123

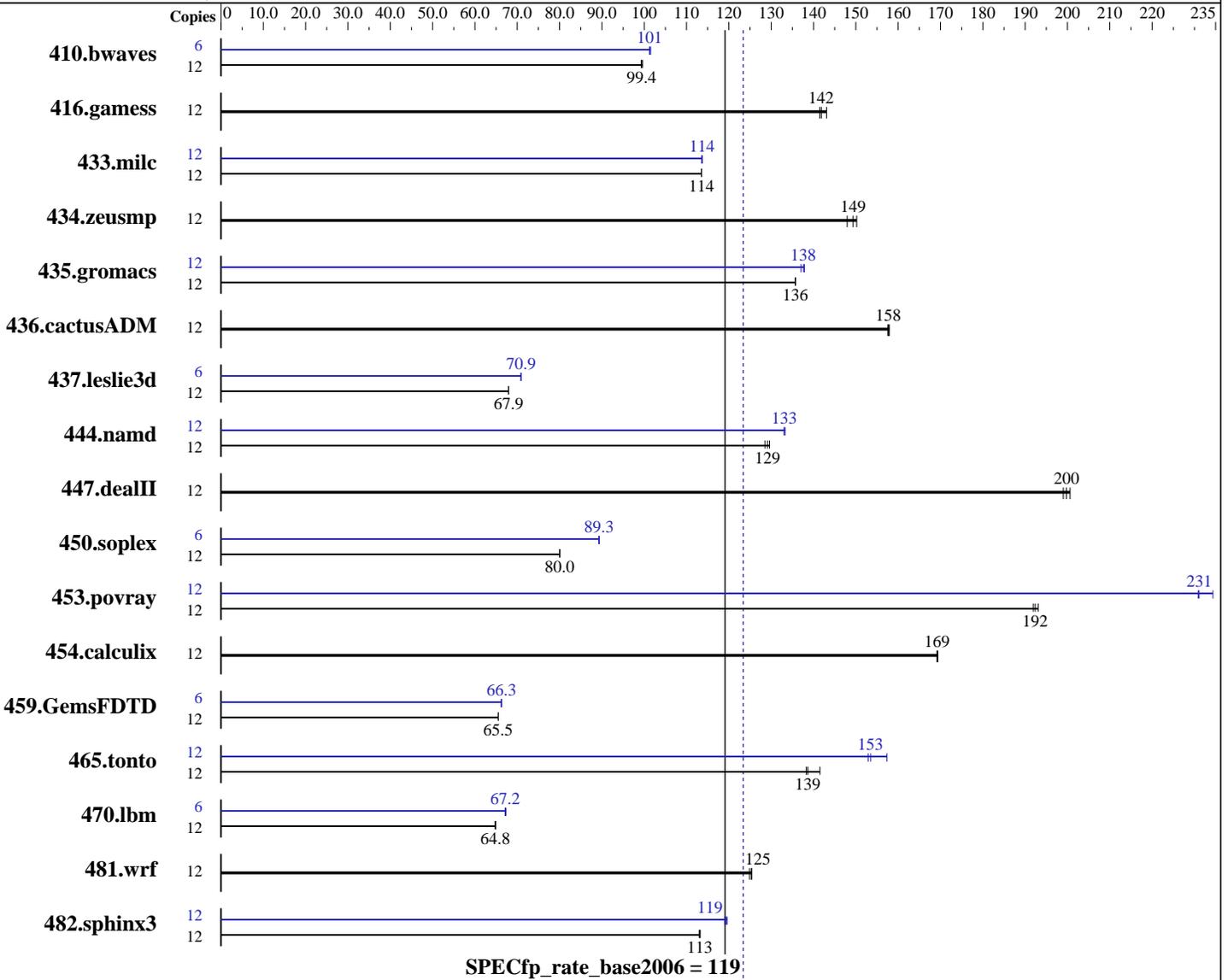$SPECfp\_rate\_base2006 = $ 119

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

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



| | Copies |
|---|---|
| 410.bwaves | 6 — 101 |
| | 12 — 99.4 |
| 416.gamess | 12 — 142 |
| 433.milc | 12 — 114 |
| | 12 — 114 |
| 434.zeusmp | 12 — 149 |
| 435.gromacs | 12 — 138 |
| | 12 — 136 |
| 436.cactusADM | 12 — 158 |
| 437.leslie3d | 6 — 70.9 |
| | 12 — 67.9 |
| 444.namd | 12 — 133 |
| | 12 — 129 |
| 447.dealII | 12 — 200 |
| 450.soplex | 6 — 89.3 |
| | 12 — 80.0 |
| 453.povray | 12 — 231 |
| | 12 — 192 |
| 454.calculix | 12 — 169 |
| 459.GemsFDTD | 6 — 66.3 |
| | 12 — 65.5 |
| 465.tonto | 12 — 153 |
| | 12 — 139 |
| 470.lbm | 6 — 67.2 |
| | 12 — 64.8 |
| 481.wrf | 12 — 125 |
| 482.sphinx3 | 12 — 119 |
| | 12 — 113 |

SPECfp_rate_base2006 = 119

SPECfp_rate2006 = 123

## 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

Continued on next page

## 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 | Base Pointers: | 64-bit |
| Other Cache: | None | Peak Pointers: | 32/64-bit |
| Memory: | 24 GB (6x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC) | Other Software: | None |
| Disk Subsystem: | 1 x SAS, 300 GB, 10000 RPM | | |
| Other Hardware: | None | | |

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 12 | 1638 | 99.6 | **1641** | **99.4** | 1642 | 99.3 | 6 | 806 | 101 | 803 | 102 | **805** | **101** |
| 416.gamess | 12 | 1661 | 141 | **1657** | **142** | 1642 | 143 | 12 | 1661 | 141 | **1657** | **142** | 1642 | 143 |
| 433.milc | 12 | 970 | 114 | 971 | 114 | **970** | **114** | 12 | 969 | 114 | **969** | **114** | 970 | 114 |
| 434.zeusmp | 12 | 727 | 150 | **731** | **149** | 738 | 148 | 12 | 727 | 150 | **731** | **149** | 738 | 148 |
| 435.gromacs | 12 | 631 | 136 | **631** | **136** | 631 | 136 | 12 | **623** | **138** | 622 | 138 | 625 | 137 |
| 436.cactusADM | 12 | **909** | **158** | 910 | 158 | 908 | 158 | 12 | **909** | **158** | 910 | 158 | 908 | 158 |
| 437.leslie3d | 12 | **1660** | **67.9** | 1659 | 68.0 | 1661 | 67.9 | 6 | **795** | **70.9** | 795 | 70.9 | 796 | 70.9 |
| 444.namd | 12 | 743 | 130 | 749 | 129 | **745** | **129** | 12 | 722 | 133 | 724 | 133 | **723** | **133** |
| 447.dealII | 12 | **687** | **200** | 684 | 201 | 690 | 199 | 12 | **687** | **200** | 684 | 201 | 690 | 199 |
| 450.soplex | 12 | 1250 | 80.1 | **1251** | **80.0** | 1251 | 80.0 | 6 | 560 | 89.3 | 560 | 89.4 | **560** | **89.3** |
| 453.povray | 12 | 333 | 192 | 331 | 193 | **332** | **192** | 12 | **276** | **231** | 276 | 231 | 272 | 234 |
| 454.calculix | 12 | **585** | **169** | 585 | 169 | 585 | 169 | 12 | **585** | **169** | 585 | 169 | 585 | 169 |
| 459.GemsFDTD | 12 | 1944 | 65.5 | 1943 | 65.5 | **1943** | **65.5** | 6 | **961** | **66.3** | 961 | 66.2 | 960 | 66.3 |
| 465.tonto | 12 | 834 | 142 | **852** | **139** | 854 | 138 | 12 | **769** | **153** | 772 | 153 | 751 | 157 |
| 470.lbm | 12 | 2543 | 64.8 | 2543 | 64.8 | **2543** | **64.8** | 6 | 1225 | 67.3 | 1228 | 67.2 | **1227** | **67.2** |
| 481.wrf | 12 | 1069 | 125 | 1073 | 125 | **1070** | **125** | 12 | 1069 | 125 | 1073 | 125 | **1070** | **125** |
| 482.sphinx3 | 12 | 2066 | 113 | 2070 | 113 | **2067** | **113** | 12 | 1955 | 120 | 1965 | 119 | **1959** | **119** |

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
    Performance/Power Setting = Traditional

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$SPECfp\_rate\_base2006 =$    119

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## General Notes

        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

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

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# Base Optimization Flags (Continued)

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

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`

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# 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: 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

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 13:26:24 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on  8 July 2010.