



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

### SPECfp<sup>®</sup>\_rate2006 = 125

PRIMERGY BX922 S2, Intel Xeon X5670, 2.93 GHz

### SPECfp\_rate\_base2006 = 121

CPU2006 license: 19

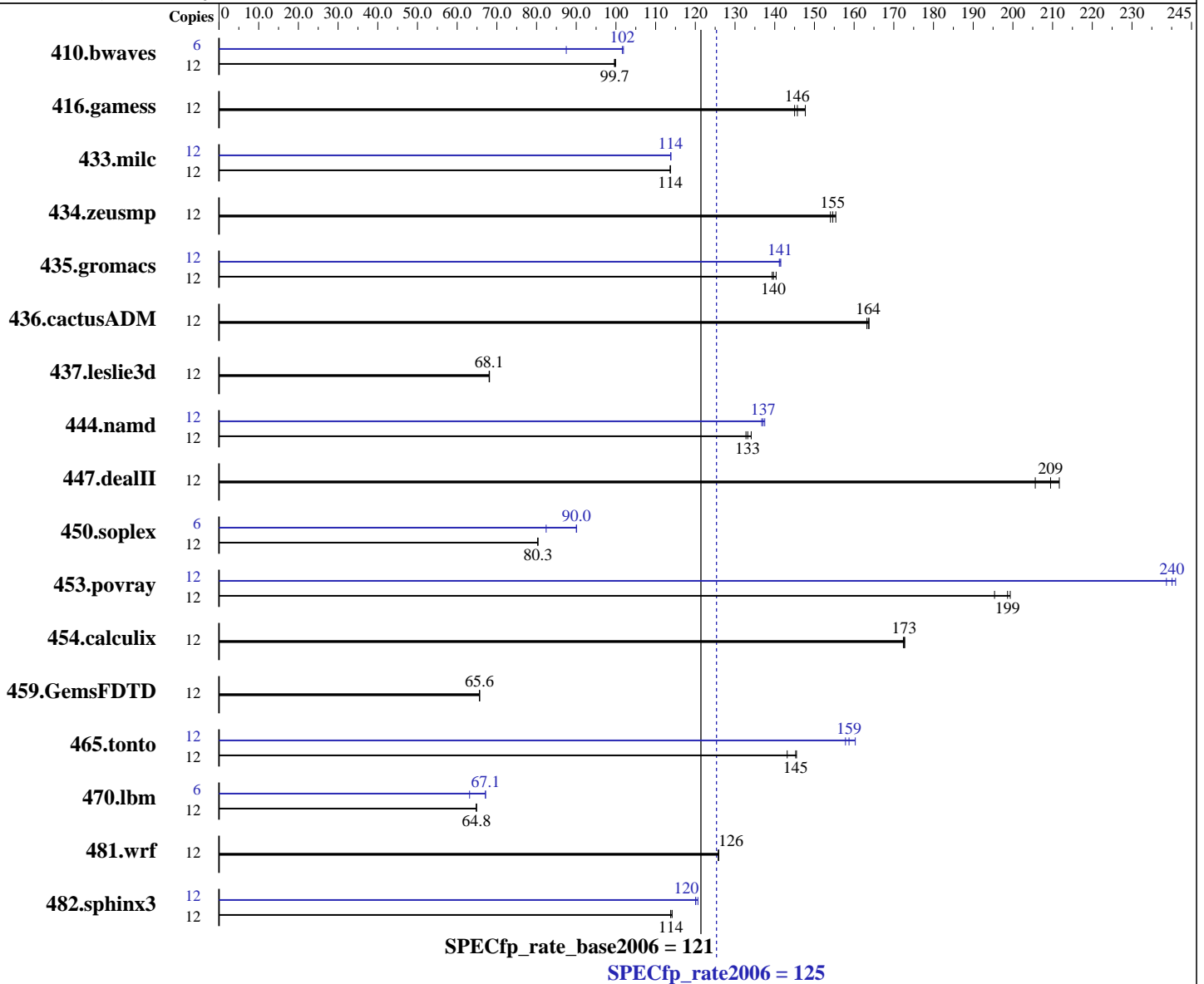
Test date: May-2010

Test sponsor: Fujitsu

Hardware Availability: Oct-2010

Tested by: Fujitsu

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon X5670  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz  
 CPU MHz: 2933  
 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

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

Continued on next page



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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 SSD SATA, 64 GB  
 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	1632	99.9	<b><u>1635</u></b>	<b><u>99.7</u></b>	1637	99.6	6	932	87.5	800	102	<b><u>803</u></b>	<b><u>102</u></b>		
416.gamess	12	1591	148	<b><u>1613</u></b>	<b><u>146</u></b>	1620	145	12	1591	148	<b><u>1613</u></b>	<b><u>146</u></b>	1620	145		
433.milc	12	<b><u>969</u></b>	<b><u>114</u></b>	968	114	969	114	12	968	114	968	114	<b><u>968</u></b>	<b><u>114</u></b>		
434.zeusmp	12	703	155	709	154	<b><u>706</u></b>	<b><u>155</u></b>	12	703	155	709	154	<b><u>706</u></b>	<b><u>155</u></b>		
435.gromacs	12	<b><u>613</u></b>	<b><u>140</u></b>	615	139	610	140	12	<b><u>606</u></b>	<b><u>141</u></b>	607	141	605	142		
436.cactusADM	12	876	164	879	163	<b><u>877</u></b>	<b><u>164</u></b>	12	876	164	879	163	<b><u>877</u></b>	<b><u>164</u></b>		
437.leslie3d	12	<b><u>1657</u></b>	<b><u>68.1</u></b>	1655	68.1	1657	68.1	12	<b><u>1657</u></b>	<b><u>68.1</u></b>	1655	68.1	1657	68.1		
444.namd	12	718	134	<b><u>722</u></b>	<b><u>133</u></b>	725	133	12	704	137	700	137	<b><u>702</u></b>	<b><u>137</u></b>		
447.dealII	12	648	212	668	206	<b><u>655</u></b>	<b><u>209</u></b>	12	648	212	668	206	<b><u>655</u></b>	<b><u>209</u></b>		
450.soplex	12	1246	80.3	<b><u>1246</u></b>	<b><u>80.3</u></b>	1246	80.3	6	607	82.4	<b><u>556</u></b>	<b><u>90.0</u></b>	556	90.1		
453.povray	12	<b><u>321</u></b>	<b><u>199</u></b>	320	199	327	195	12	<b><u>266</u></b>	<b><u>240</u></b>	265	241	267	239		
454.calculix	12	573	173	<b><u>574</u></b>	<b><u>173</u></b>	574	172	12	573	173	<b><u>574</u></b>	<b><u>173</u></b>	574	172		
459.GemsFDTD	12	1939	65.7	1941	65.6	<b><u>1939</u></b>	<b><u>65.6</u></b>	12	1939	65.7	1941	65.6	<b><u>1939</u></b>	<b><u>65.6</u></b>		
465.tonto	12	825	143	<b><u>813</u></b>	<b><u>145</u></b>	812	145	12	737	160	<b><u>744</u></b>	<b><u>159</u></b>	748	158		
470.lbm	12	2542	64.9	2543	64.8	<b><u>2543</u></b>	<b><u>64.8</u></b>	6	<b><u>1228</u></b>	<b><u>67.1</u></b>	1228	67.2	1306	63.1		
481.wrf	12	1065	126	<b><u>1065</u></b>	<b><u>126</u></b>	1066	126	12	1065	126	<b><u>1065</u></b>	<b><u>126</u></b>	1066	126		
482.sphinx3	12	2049	114	<b><u>2055</u></b>	<b><u>114</u></b>	2055	114	12	1939	121	1948	120	<b><u>1947</u></b>	<b><u>120</u></b>		

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

BIOS configuration:  
 Data Reuse Optimization = Disabled  
 Performance/Power Setting = Traditional

## 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



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## 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.lelie3d: -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

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static



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## 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:

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

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## Peak Optimization Flags (Continued)

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.deallI: 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: basepeak = yes

459.GemsFDTD: basepeak = yes

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/Intel-ic11.1-linux64-revE.20100330.02.html>



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