



# SPEC® CFP2006 Result

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## Fujitsu

### SPECfp®\_rate2006 = 92.1

PRIMERGY BX620 S6, Intel Xeon E5640, 2.67 GHz

### SPECfp\_rate\_base2006 = 88.7

CPU2006 license: 19

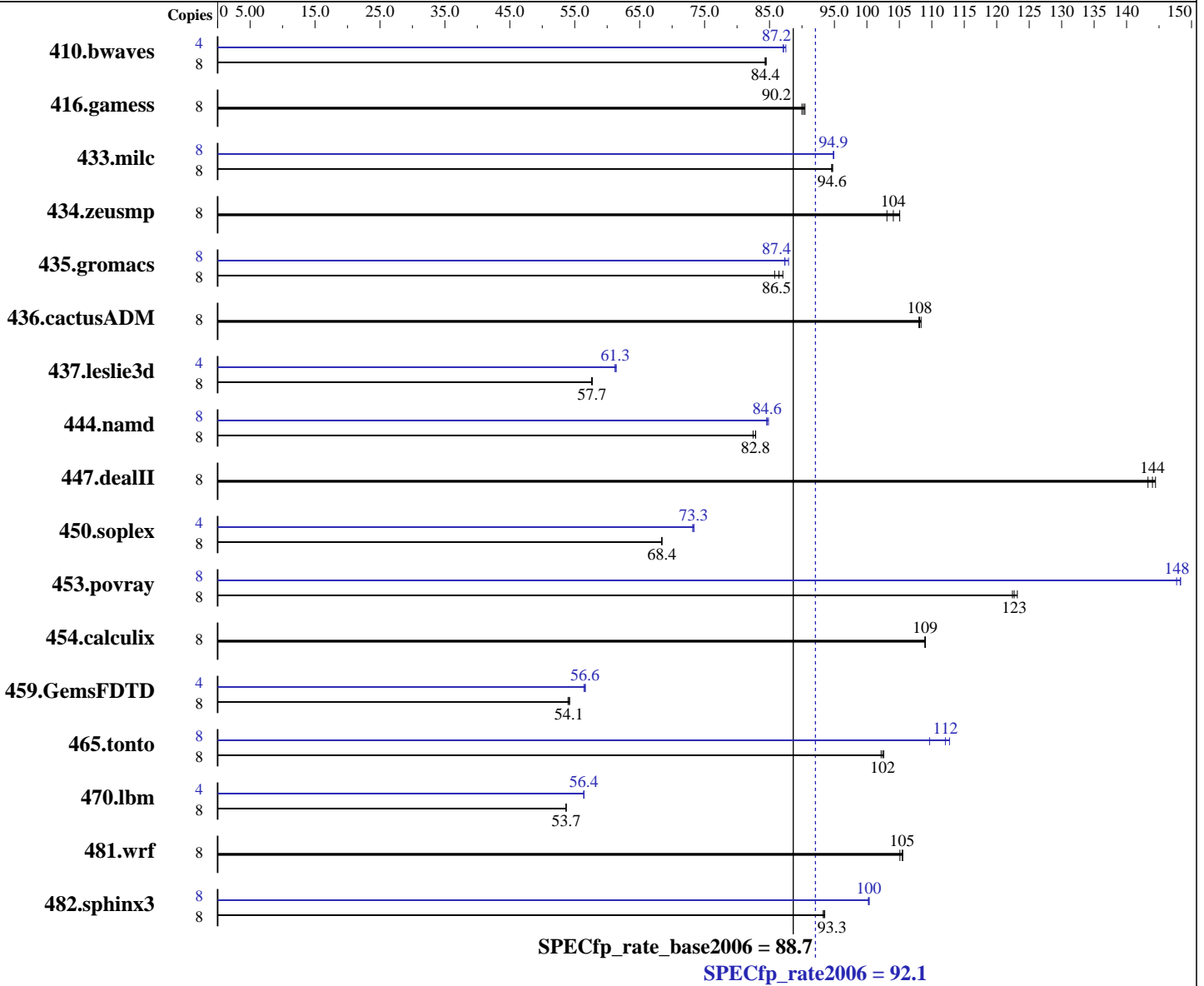
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Sep-2010

Hardware Availability: Jul-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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) with SP1, Kernel 2.6.32.12-0.7-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: Run level 3 (multi-user)

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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, see add'l detail in notes)  
Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM  
Other Hardware: --

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	8	1287	84.5	1289	84.3	<b>1289</b>	<b>84.4</b>	4	624	87.1	621	87.5	<b>624</b>	<b>87.2</b>		
416.gamess	8	1731	90.5	1741	90.0	<b>1736</b>	<b>90.2</b>	8	1731	90.5	1741	90.0	<b>1736</b>	<b>90.2</b>		
433.milc	8	<b>776</b>	<b>94.6</b>	777	94.6	775	94.7	8	774	94.9	774	94.9	<b>774</b>	<b>94.9</b>		
434.zeusmp	8	706	103	<b>699</b>	<b>104</b>	693	105	8	706	103	<b>699</b>	<b>104</b>	693	105		
435.gromacs	8	656	87.1	666	85.8	<b>661</b>	<b>86.5</b>	8	650	87.9	654	87.3	<b>654</b>	<b>87.4</b>		
436.cactusADM	8	882	108	885	108	<b>884</b>	<b>108</b>	8	882	108	885	108	<b>884</b>	<b>108</b>		
437.leslie3d	8	1303	57.7	1306	57.6	<b>1304</b>	<b>57.7</b>	4	612	61.4	614	61.2	<b>614</b>	<b>61.3</b>		
444.namd	8	774	82.9	<b>774</b>	<b>82.8</b>	778	82.5	8	756	84.8	759	84.6	<b>758</b>	<b>84.6</b>		
447.dealII	8	634	144	639	143	<b>636</b>	<b>144</b>	8	634	144	639	143	<b>636</b>	<b>144</b>		
450.soplex	8	976	68.4	975	68.4	<b>975</b>	<b>68.4</b>	4	455	73.4	<b>455</b>	<b>73.3</b>	456	73.2		
453.povray	8	<b>347</b>	<b>123</b>	348	122	346	123	8	288	148	<b>287</b>	<b>148</b>	287	148		
454.calculix	8	606	109	<b>606</b>	<b>109</b>	606	109	8	606	109	<b>606</b>	<b>109</b>	606	109		
459.GemsFDTD	8	1565	54.2	<b>1569</b>	<b>54.1</b>	1573	54.0	4	752	56.4	<b>750</b>	<b>56.6</b>	749	56.6		
465.tonto	8	<b>768</b>	<b>102</b>	767	103	770	102	8	<b>702</b>	<b>112</b>	698	113	718	110		
470.lbm	8	2048	53.7	2048	53.7	<b>2048</b>	<b>53.7</b>	4	975	56.4	974	56.4	<b>974</b>	<b>56.4</b>		
481.wrf	8	847	106	850	105	<b>847</b>	<b>105</b>	8	847	106	850	105	<b>847</b>	<b>105</b>		
482.sphinx3	8	1667	93.5	<b>1671</b>	<b>93.3</b>	1671	93.3	8	1556	100	<b>1555</b>	<b>100</b>	1553	100		

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

The system automatically configures the memory to run at 1067 MHz.  
BIOS configuration:  
Data Reuse Optimization = Disable  
Performance/Power Setting = Traditional



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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.dealIII: 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](mailto:webmaster@spec.org).

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