



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

### SPECfp<sup>®</sup>\_rate2006 = 64.8

PRIMERGY BX920 S2, Intel Xeon L5609, 1.87 GHz

### SPECfp\_rate\_base2006 = 62.6

CPU2006 license: 19

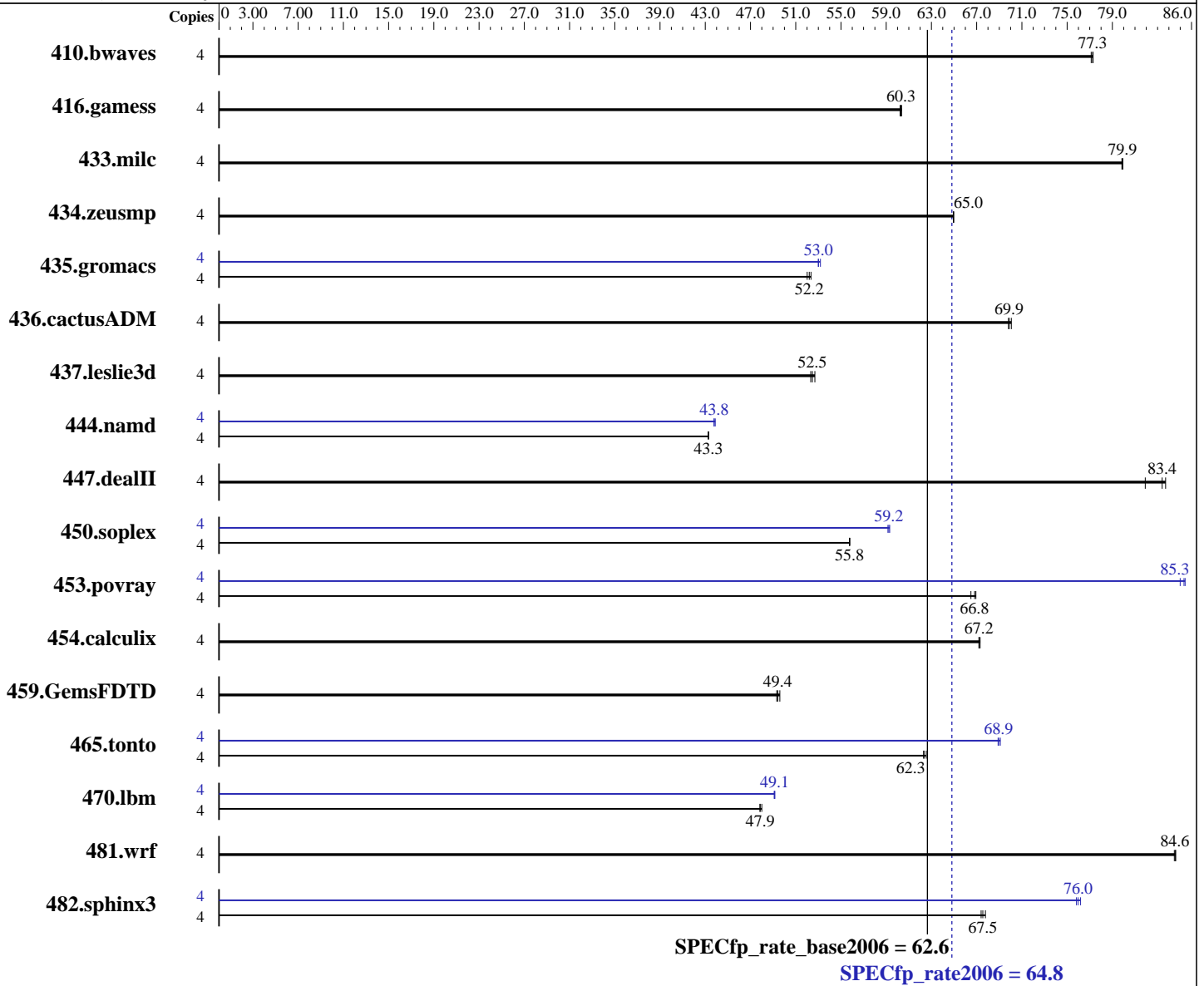
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2010

Hardware Availability: Aug-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon L5609  
 CPU Characteristics:  
 CPU MHz: 1867  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 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: 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 (3x8 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
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	4	<b>704</b>	<b>77.3</b>	705	77.1	703	77.3	4	<b>704</b>	<b>77.3</b>	705	77.1	703	77.3
416.gamess	4	<b>1299</b>	<b>60.3</b>	1298	60.4	1300	60.2	4	<b>1299</b>	<b>60.3</b>	1298	60.4	1300	60.2
433.milc	4	460	79.8	<b>460</b>	<b>79.9</b>	459	79.9	4	460	79.8	<b>460</b>	<b>79.9</b>	459	79.9
434.zeusmp	4	<b>560</b>	<b>65.0</b>	560	65.0	560	64.9	4	<b>560</b>	<b>65.0</b>	560	65.0	560	64.9
435.gromacs	4	<b>547</b>	<b>52.2</b>	549	52.0	546	52.3	4	539	53.0	537	53.2	<b>539</b>	<b>53.0</b>
436.cactusADM	4	685	69.8	<b>684</b>	<b>69.9</b>	682	70.1	4	685	69.8	<b>684</b>	<b>69.9</b>	682	70.1
437.leslie3d	4	714	52.7	<b>717</b>	<b>52.5</b>	719	52.3	4	714	52.7	<b>717</b>	<b>52.5</b>	719	52.3
444.namd	4	<b>741</b>	<b>43.3</b>	741	43.3	741	43.3	4	731	43.9	<b>733</b>	<b>43.8</b>	733	43.8
447.dealII	4	547	83.7	<b>549</b>	<b>83.4</b>	559	81.9	4	547	83.7	<b>549</b>	<b>83.4</b>	559	81.9
450.soplex	4	<b>598</b>	<b>55.8</b>	598	55.7	598	55.8	4	564	59.2	<b>563</b>	<b>59.2</b>	562	59.3
453.povray	4	320	66.5	<b>318</b>	<b>66.8</b>	318	66.9	4	249	85.4	<b>249</b>	<b>85.3</b>	250	85.0
454.calculix	4	491	67.2	<b>491</b>	<b>67.2</b>	490	67.3	4	491	67.2	<b>491</b>	<b>67.2</b>	490	67.3
459.GemsFDTD	4	<b>859</b>	<b>49.4</b>	856	49.6	861	49.3	4	<b>859</b>	<b>49.4</b>	856	49.6	861	49.3
465.tonto	4	629	62.5	<b>631</b>	<b>62.3</b>	632	62.3	4	<b>571</b>	<b>68.9</b>	571	68.9	570	69.1
470.lbm	4	1145	48.0	<b>1148</b>	<b>47.9</b>	1149	47.8	4	1118	49.1	<b>1118</b>	<b>49.1</b>	1120	49.1
481.wrf	4	528	84.6	529	84.5	<b>528</b>	<b>84.6</b>	4	528	84.6	529	84.5	<b>528</b>	<b>84.6</b>
482.sphinx3	4	1157	67.4	1150	67.8	<b>1154</b>	<b>67.5</b>	4	<b>1026</b>	<b>76.0</b>	1028	75.8	1023	76.2

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



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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: basepeak = yes

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: basepeak = yes

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

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## Peak Optimization Flags (Continued)

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>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.02.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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