



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>\_rate2006 = 74.4

PRIMERGY BX920 S2, Intel Xeon E5503, 2.0 GHz

SPECfp\_rate\_base2006 = 71.8

CPU2006 license: 19

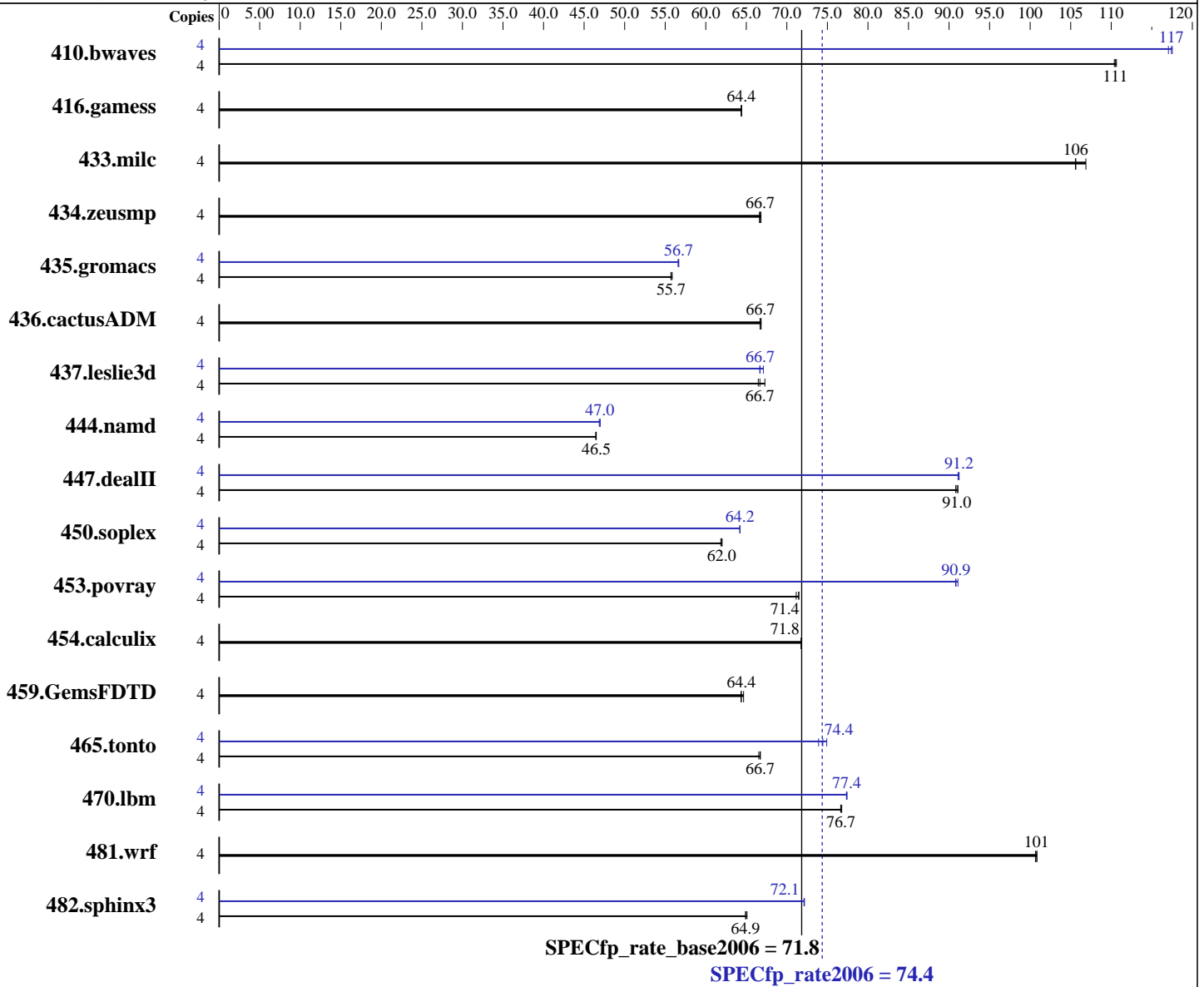
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jun-2010

Hardware Availability: Aug-2010

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5503  
 CPU Characteristics:  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 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: Multi-User Run Level 3

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L3 Cache: 4 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (6x8 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>492</b>	<b>111</b>	491	111	492	110	4	464	117	463	118	<b>463</b>	<b>117</b>		
416.gamess	4	<b>1216</b>	<b>64.4</b>	1216	64.4	1217	64.4	4	<b>1216</b>	<b>64.4</b>	1216	64.4	1217	64.4		
433.milc	4	344	107	<b>348</b>	<b>106</b>	348	106	4	344	107	<b>348</b>	<b>106</b>	348	106		
434.zeusmp	4	546	66.6	<b>545</b>	<b>66.7</b>	545	66.8	4	546	66.6	<b>545</b>	<b>66.7</b>	545	66.8		
435.gromacs	4	513	55.7	511	55.9	<b>512</b>	<b>55.7</b>	4	504	56.7	505	56.6	<b>504</b>	<b>56.7</b>		
436.cactusADM	4	715	66.8	717	66.7	<b>716</b>	<b>66.7</b>	4	715	66.8	717	66.7	<b>716</b>	<b>66.7</b>		
437.leslie3d	4	566	66.5	559	67.3	<b>564</b>	<b>66.7</b>	4	560	67.1	564	66.7	<b>564</b>	<b>66.7</b>		
444.namd	4	<b>690</b>	<b>46.5</b>	691	46.4	690	46.5	4	<b>683</b>	<b>47.0</b>	683	47.0	684	46.9		
447.dealII	4	<b>503</b>	<b>91.0</b>	504	90.8	502	91.1	4	<b>502</b>	<b>91.2</b>	502	91.1	502	91.2		
450.soplex	4	<b>538</b>	<b>62.0</b>	538	62.0	539	61.9	4	<b>519</b>	<b>64.2</b>	520	64.2	519	64.2		
453.povray	4	298	71.5	299	71.2	<b>298</b>	<b>71.4</b>	4	234	91.1	234	90.8	<b>234</b>	<b>90.9</b>		
454.calculix	4	460	71.8	460	71.8	<b>460</b>	<b>71.8</b>	4	460	71.8	460	71.8	<b>460</b>	<b>71.8</b>		
459.GemsFDTD	4	656	64.7	660	64.4	<b>659</b>	<b>64.4</b>	4	656	64.7	660	64.4	<b>659</b>	<b>64.4</b>		
465.tonto	4	590	66.7	<b>590</b>	<b>66.7</b>	592	66.5	4	533	73.9	<b>529</b>	<b>74.4</b>	525	74.9		
470.lbm	4	716	76.8	717	76.6	<b>717</b>	<b>76.7</b>	4	711	77.4	<b>710</b>	<b>77.4</b>	710	77.4		
481.wrf	4	443	101	444	101	<b>443</b>	<b>101</b>	4	443	101	444	101	<b>443</b>	<b>101</b>		
482.sphinx3	4	<b>1201</b>	<b>64.9</b>	1198	65.1	1201	64.9	4	<b>1081</b>	<b>72.1</b>	1081	72.1	1080	72.2		

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 800 MHz.



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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: -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: 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

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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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