



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

### SPECfp<sup>®</sup>\_rate2006 = 103

PRIMERGY RX300 S5, Intel Xeon X5570, 2.93 GHz

### SPECfp\_rate\_base2006 = 99.0

CPU2006 license: 19

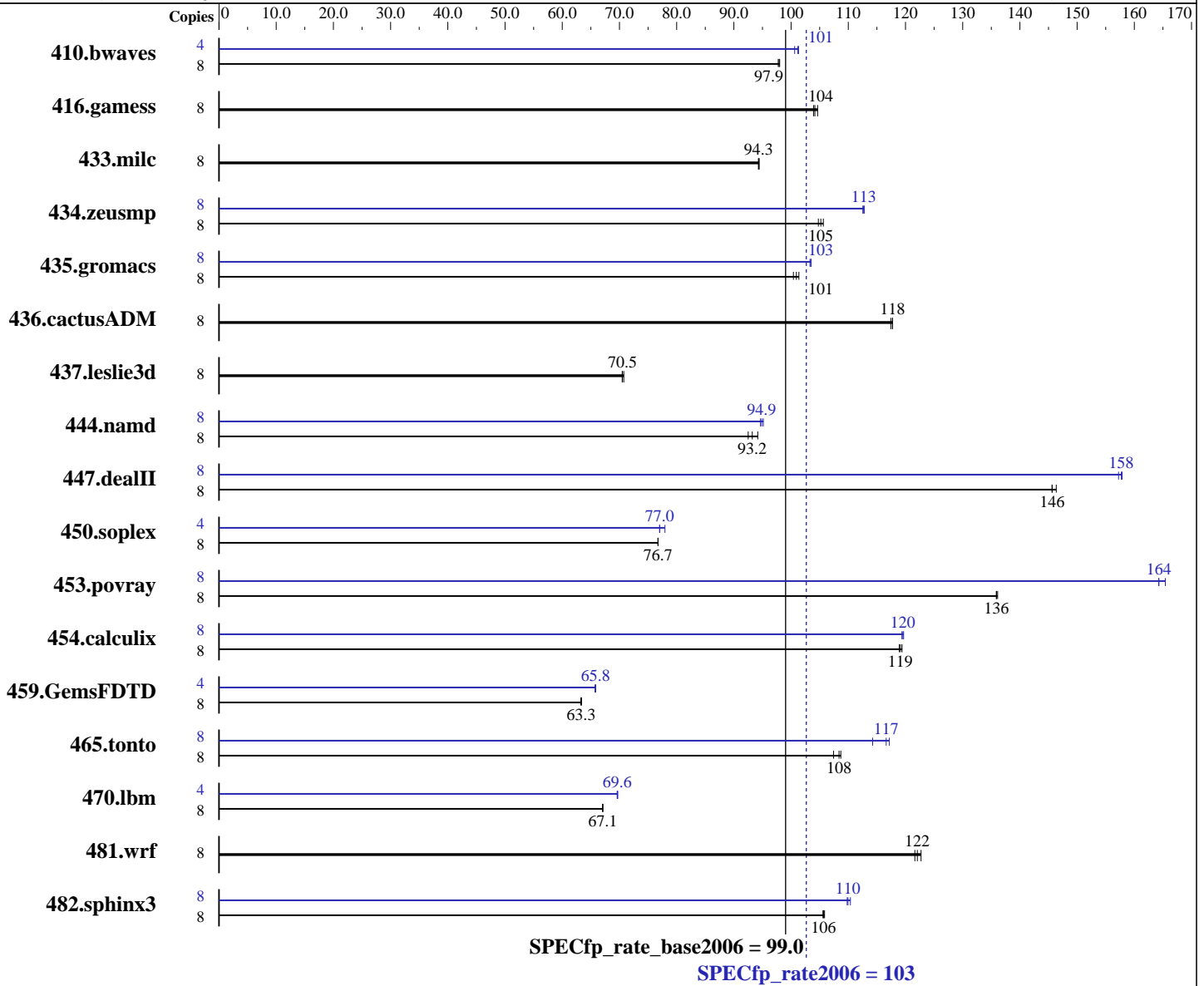
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon X5570  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz  
 CPU MHz: 2933  
 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 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smpp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080, l\_cprof\_p\_11.0.080  
 Auto Parallel: No  
 File System: ext3  
 System State: Multi-User Run Level 3  
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 12 GB (3x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)  
 Disk Subsystem: 1 x SATA, 250 GB, 7200 RPM  
 Other Hardware: None

Peak Pointers: 32/64-bit  
 Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	<b><u>1110</u></b>	<b><u>97.9</u></b>	1109	98.0	1112	97.8	4	540	101	537	101	<b><u>537</u></b>	<b><u>101</u></b>
416.gamess	8	1497	105	<b><u>1504</u></b>	<b><u>104</u></b>	1507	104	8	1497	105	<b><u>1504</u></b>	<b><u>104</u></b>	1507	104
433.milc	8	779	94.3	<b><u>779</u></b>	<b><u>94.3</u></b>	778	94.4	8	779	94.3	<b><u>779</u></b>	<b><u>94.3</u></b>	778	94.4
434.zeusmp	8	689	106	<b><u>692</u></b>	<b><u>105</u></b>	695	105	8	647	113	645	113	<b><u>646</u></b>	<b><u>113</u></b>
435.gromacs	8	563	101	569	100	<b><u>566</u></b>	<b><u>101</u></b>	8	<b><u>552</u></b>	<b><u>103</u></b>	552	103	553	103
436.cactusADM	8	814	117	<b><u>812</u></b>	<b><u>118</u></b>	812	118	8	814	117	<b><u>812</u></b>	<b><u>118</u></b>	812	118
437.leslie3d	8	1067	70.5	<b><u>1066</u></b>	<b><u>70.5</u></b>	1063	70.8	8	1067	70.5	<b><u>1066</u></b>	<b><u>70.5</u></b>	1063	70.8
444.namd	8	681	94.2	<b><u>688</u></b>	<b><u>93.2</u></b>	694	92.5	8	678	94.6	674	95.1	<b><u>676</u></b>	<b><u>94.9</u></b>
447.dealII	8	628	146	<b><u>628</u></b>	<b><u>146</u></b>	625	146	8	582	157	580	158	<b><u>580</u></b>	<b><u>158</u></b>
450.soplex	8	869	76.8	<b><u>869</u></b>	<b><u>76.7</u></b>	870	76.7	4	433	77.0	<b><u>433</u></b>	<b><u>77.0</u></b>	428	78.0
453.povray	8	313	136	<b><u>313</u></b>	<b><u>136</u></b>	313	136	8	259	164	257	165	<b><u>259</u></b>	<b><u>164</u></b>
454.calculix	8	553	119	555	119	<b><u>554</u></b>	<b><u>119</u></b>	8	552	120	553	119	<b><u>552</u></b>	<b><u>120</u></b>
459.GemsFDTD	8	1342	63.2	<b><u>1340</u></b>	<b><u>63.3</u></b>	1339	63.4	4	645	65.8	646	65.7	<b><u>645</u></b>	<b><u>65.8</u></b>
465.tonto	8	733	107	724	109	<b><u>726</u></b>	<b><u>108</u></b>	8	689	114	672	117	<b><u>675</u></b>	<b><u>117</u></b>
470.lbm	8	1638	67.1	1639	67.1	<b><u>1639</u></b>	<b><u>67.1</u></b>	4	<b><u>789</u></b>	<b><u>69.6</u></b>	789	69.6	788	69.7
481.wrf	8	728	123	<b><u>732</u></b>	<b><u>122</u></b>	735	122	8	728	123	<b><u>732</u></b>	<b><u>122</u></b>	735	122
482.sphinx3	8	1473	106	<b><u>1475</u></b>	<b><u>106</u></b>	1477	106	8	<b><u>1418</u></b>	<b><u>110</u></b>	1413	110	1420	110

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 processes to cores and its local memory.  
 Details may be found in the config file.

## General Notes

This result was measured on the PRIMERGY RX300 S5. The PRIMERGY TX300 S5 and the PRIMERGY RX300 S5 are electronically equivalent.

For information about Fujitsu please visit: <http://www.fujitsu.com>



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## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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

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

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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: basepeak = yes

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

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## Peak Optimization Flags (Continued)

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: -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: -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)

437.leslie3d: basepeak = yes

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 -opt-prefetch

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

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090901.xml>

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

Tested with SPEC CPU2006 v1.1.  
Report generated on Wed Jul 23 04:40:10 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 13 October 2009.