



# SPEC® CFP2006 Result

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## Fujitsu

### SPECfp®\_rate2006 = 93.9

PRIMERGY RX300 S7, Intel Xeon E5-2603, 1.80 GHz

### SPECfp\_rate\_base2006 = 91.1

CPU2006 license: 19

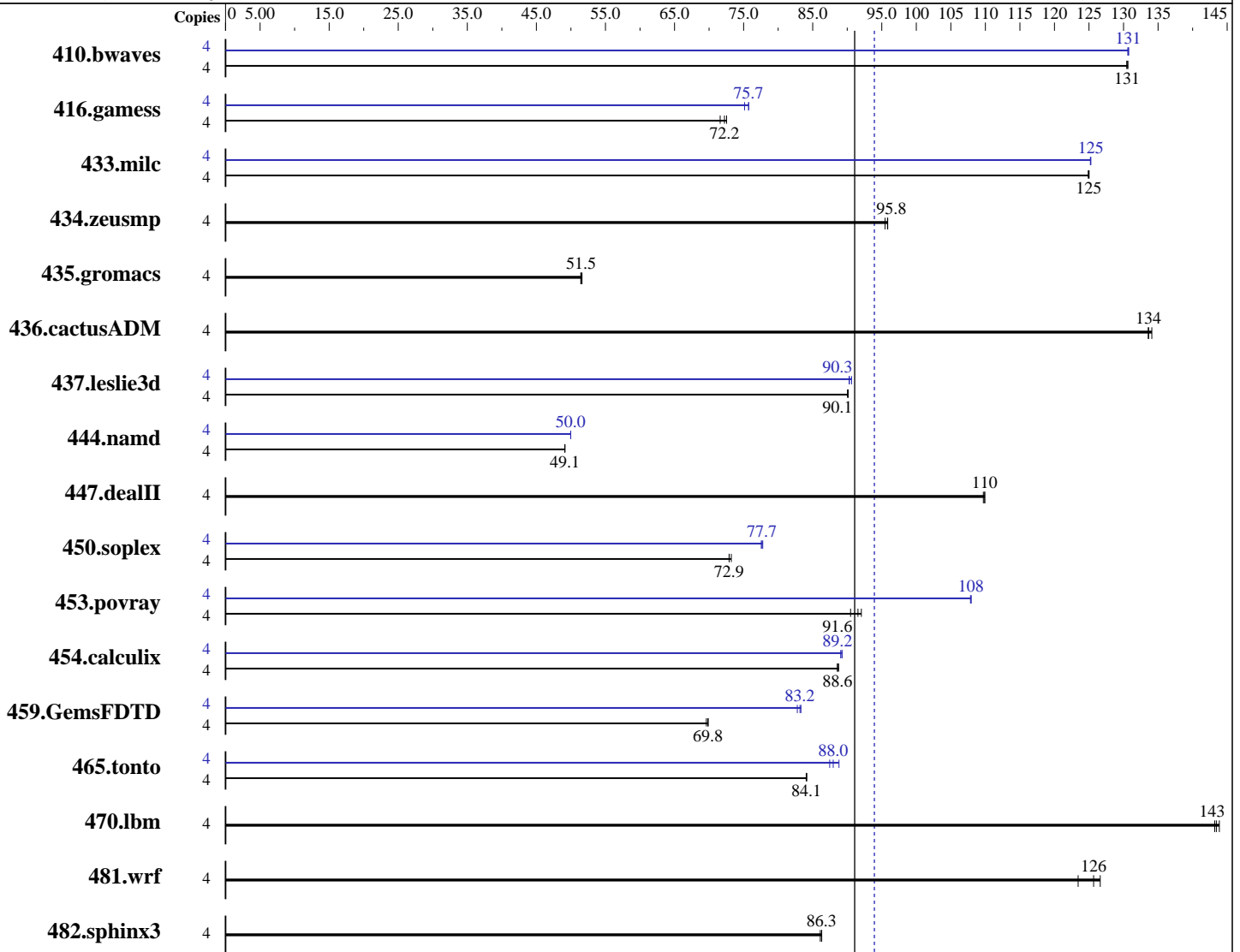
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



SPECfp\_rate\_base2006 = 91.1

SPECfp\_rate2006 = 93.9

### Hardware

CPU Name: Intel Xeon E5-2603  
 CPU Characteristics:  
 CPU MHz: 1800  
 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: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

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L3 Cache: 10 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 64 GB (8 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz and CL7)  
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM  
 Other Hardware: None

System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-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>416</b>	<b>131</b>	417	130	416	131	4	<b>416</b>	<b>131</b>	416	131	416	131		
416.gamess	4	<b>1084</b>	<b>72.2</b>	1094	71.6	1080	72.5	4	<b>1034</b>	<b>75.7</b>	1034	75.7	1042	75.1		
433.milc	4	<b>294</b>	<b>125</b>	294	125	294	125	4	<b>293</b>	<b>125</b>	293	125	293	125		
434.zeusmp	4	380	95.9	381	95.5	<b>380</b>	<b>95.8</b>	4	380	95.9	381	95.5	<b>380</b>	<b>95.8</b>		
435.gromacs	4	555	51.4	<b>555</b>	<b>51.5</b>	553	51.6	4	555	51.4	<b>555</b>	<b>51.5</b>	553	51.6		
436.cactusADM	4	358	134	356	134	<b>358</b>	<b>134</b>	4	358	134	356	134	<b>358</b>	<b>134</b>		
437.leslie3d	4	<b>417</b>	<b>90.1</b>	417	90.1	418	90.0	4	<b>416</b>	<b>90.3</b>	415	90.6	416	90.3		
444.namd	4	<b>653</b>	<b>49.1</b>	653	49.1	653	49.1	4	642	50.0	642	50.0	<b>642</b>	<b>50.0</b>		
447.dealII	4	416	110	<b>416</b>	<b>110</b>	417	110	4	416	110	<b>416</b>	<b>110</b>	417	110		
450.soplex	4	<b>458</b>	<b>72.9</b>	458	72.9	456	73.2	4	429	77.8	<b>430</b>	<b>77.7</b>	430	77.6		
453.povray	4	<b>232</b>	<b>91.6</b>	231	92.0	235	90.5	4	197	108	<b>197</b>	<b>108</b>	197	108		
454.calculix	4	373	88.6	372	88.8	<b>372</b>	<b>88.6</b>	4	371	89.0	<b>370</b>	<b>89.2</b>	370	89.2		
459.GemsFDTD	4	610	69.6	<b>608</b>	<b>69.8</b>	607	69.9	4	509	83.3	<b>510</b>	<b>83.2</b>	513	82.8		
465.tonto	4	468	84.1	<b>468</b>	<b>84.1</b>	468	84.1	4	450	87.5	<b>447</b>	<b>88.0</b>	443	88.8		
470.lbm	4	382	144	<b>383</b>	<b>143</b>	384	143	4	382	144	<b>383</b>	<b>143</b>	384	143		
481.wrf	4	<b>356</b>	<b>126</b>	353	127	362	123	4	<b>356</b>	<b>126</b>	353	127	362	123		
482.sphinx3	4	<b>904</b>	<b>86.3</b>	903	86.3	906	86.1	4	<b>904</b>	<b>86.3</b>	903	86.3	906	86.1		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

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## General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
For information about Fujitsu please visit: <http://www.fujitsu.com>

## 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:  
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:

icc -m64

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  
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 Portability Flags (Continued)

482.sphinx3: -DSPEC\_CPU\_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
-opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias  
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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

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