



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

PRIMERGY RX100 S5, Intel Core 2 Duo E7400, 2.80 GHz

SPECfp<sup>®</sup>\_rate2006 = 30.9

SPECfp\_rate\_base2006 = 29.8

CPU2006 license: 19

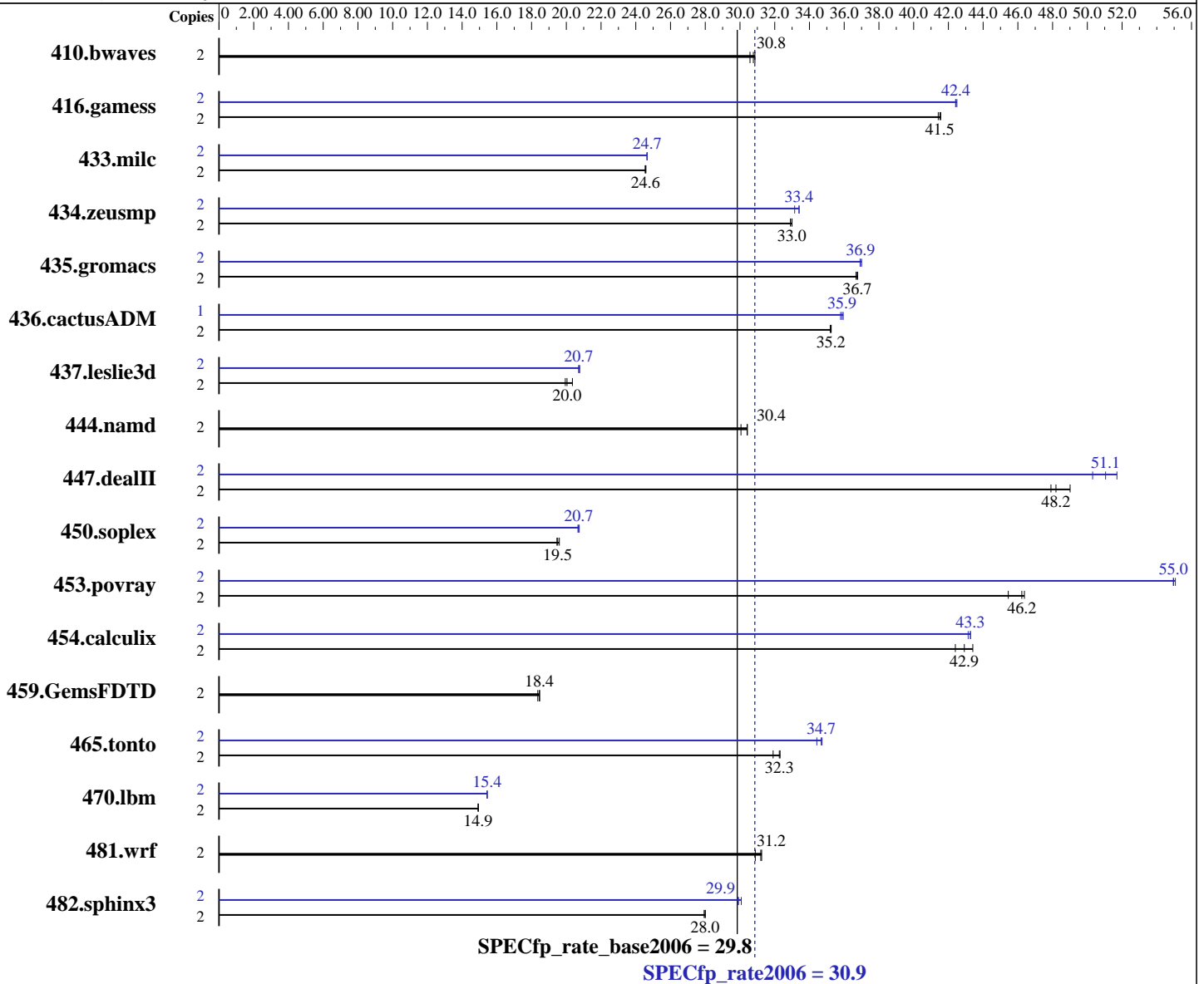
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Apr-2009

Hardware Availability: Apr-2009

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Core 2 Duo E7400  
 CPU Characteristics: 1067 MHz system bus  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 3 MB I+D on chip per chip

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### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l\_cproc\_p\_11.0.066, l\_cprof\_p\_11.0.066  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User Run Level 3  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)  
Disk Subsystem: 1x 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	2	881	30.9	<b>883</b>	<b>30.8</b>	889	30.6	2	881	30.9	<b>883</b>	<b>30.8</b>	889	30.6
416.gamess	2	946	41.4	<b>943</b>	<b>41.5</b>	942	41.6	2	923	42.4	<b>923</b>	<b>42.4</b>	922	42.5
433.milc	2	<b>748</b>	<b>24.6</b>	748	24.5	747	24.6	2	745	24.7	745	24.6	<b>745</b>	<b>24.7</b>
434.zeusmp	2	<b>552</b>	<b>33.0</b>	552	33.0	553	32.9	2	545	33.4	<b>545</b>	<b>33.4</b>	549	33.1
435.gromacs	2	389	36.7	<b>389</b>	<b>36.7</b>	388	36.8	2	386	37.0	387	36.9	<b>387</b>	<b>36.9</b>
436.cactusADM	2	678	35.3	679	35.2	<b>678</b>	<b>35.2</b>	1	332	35.9	<b>333</b>	<b>35.9</b>	334	35.8
437.leslie3d	2	943	19.9	<b>938</b>	<b>20.0</b>	924	20.4	2	<b>907</b>	<b>20.7</b>	905	20.8	908	20.7
444.namd	2	<b>527</b>	<b>30.4</b>	527	30.4	534	30.1	2	<b>527</b>	<b>30.4</b>	527	30.4	534	30.1
447.dealII	2	467	49.0	478	47.9	<b>475</b>	<b>48.2</b>	2	455	50.3	443	51.7	<b>448</b>	<b>51.1</b>
450.soplex	2	<b>855</b>	<b>19.5</b>	857	19.5	851	19.6	2	804	20.7	807	20.7	<b>806</b>	<b>20.7</b>
453.povray	2	234	45.4	229	46.4	<b>230</b>	<b>46.2</b>	2	<b>194</b>	<b>55.0</b>	193	55.1	194	55.0
454.calculix	2	389	42.4	380	43.4	<b>384</b>	<b>42.9</b>	2	381	43.3	<b>381</b>	<b>43.3</b>	382	43.1
459.GemsFDTD	2	1149	18.5	<b>1150</b>	<b>18.4</b>	1156	18.4	2	1149	18.5	<b>1150</b>	<b>18.4</b>	1156	18.4
465.tonto	2	609	32.3	<b>610</b>	<b>32.3</b>	617	31.9	2	<b>568</b>	<b>34.7</b>	567	34.7	572	34.4
470.lbm	2	<b>1841</b>	<b>14.9</b>	1842	14.9	1840	14.9	2	1780	15.4	<b>1780</b>	<b>15.4</b>	1780	15.4
481.wrf	2	<b>716</b>	<b>31.2</b>	723	30.9	715	31.2	2	<b>716</b>	<b>31.2</b>	723	30.9	715	31.2
482.sphinx3	2	<b>1393</b>	<b>28.0</b>	1392	28.0	1395	27.9	2	1296	30.1	<b>1303</b>	<b>29.9</b>	1305	29.9

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.  
taskset has been used to bind processes to cores except  
for 436.cactusADM peak

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M



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### Platform Notes

BIOS configuration:  
Adjacent Sector Prefetch = Disable

### General Notes

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

### 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.deallI: -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



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## Base Optimization Flags

C benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

## 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 (except as noted below):  
ifort

437.leslie3d: ifort -m32

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  
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

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## Peak Portability Flags (Continued)

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: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -fno-alias  
470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32  
482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: basepeak = yes  
447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-  
450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3  
453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes  
416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -ansi-alias  
-scalar-rep-  
434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static  
437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch  
459.GemsFDTD: basepeak = yes  
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -opt-prefetch -parallel  
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.05.html>  
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.05.xml>  
<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml>

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

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