



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = 28.2

PRIMERGY BX620 S6, Intel Xeon E5506, 2.13 GHz

SPECfp\_base2006 = 26.2

CPU2006 license: 19

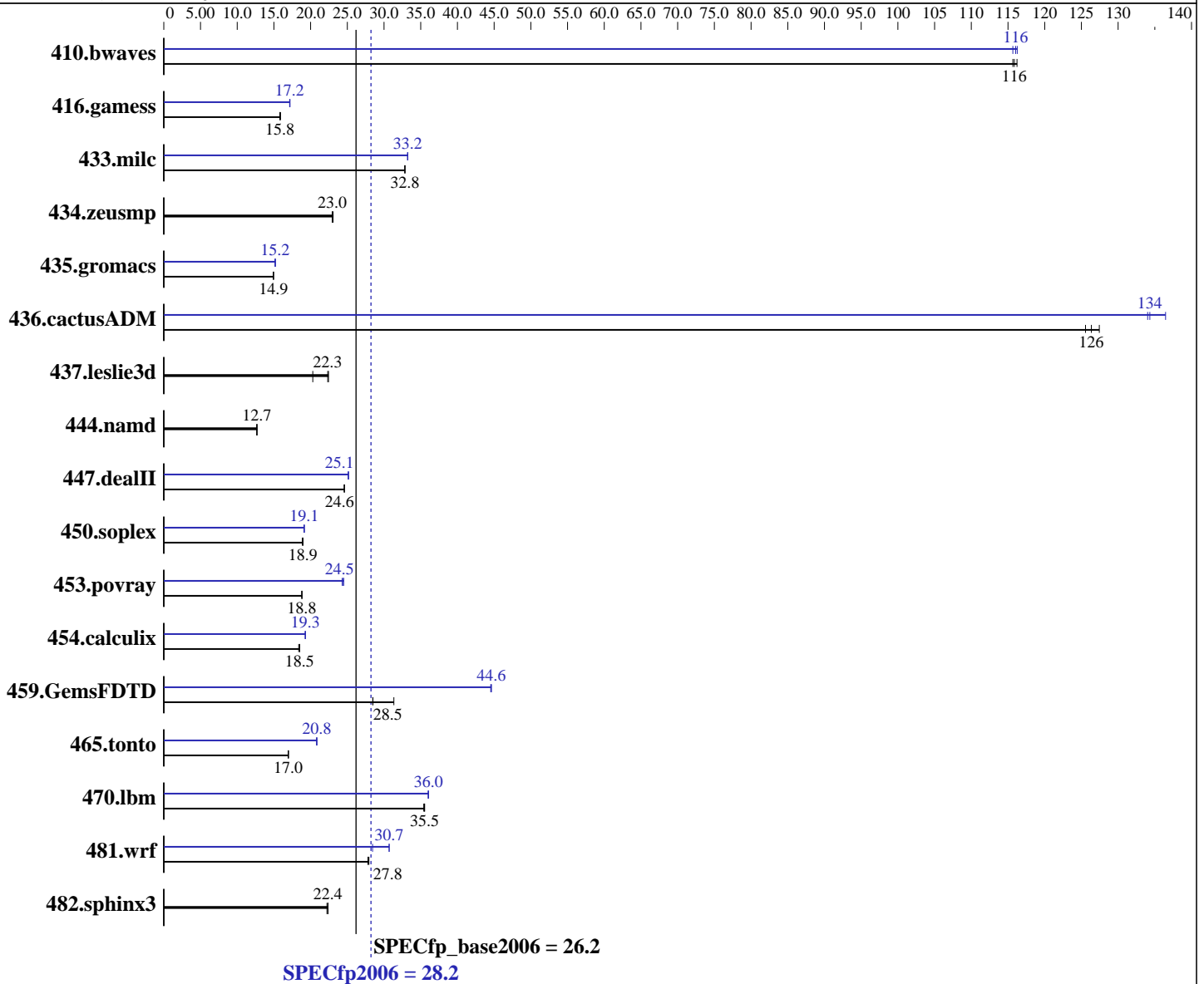
Test date: Sep-2010

Test sponsor: Fujitsu

Hardware Availability: Jul-2010

Tested by: Fujitsu

Software Availability: Jan-2010



### Hardware

CPU Name: Intel Xeon E5506  
 CPU Characteristics:  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 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: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)

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L3 Cache: 4 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-10600R, ECC, running at 800 MHz and CL6)  
 Disk Subsystem: 1 x SAS, 300 GB, 10000 RPM  
 Other Hardware: --

Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	117	116	<b><u>117</u></b>	<b><u>116</u></b>	117	116	<b><u>117</u></b>	116	117	116	<b><u>117</u></b>	<b><u>116</u></b>
416.gamess	<b><u>1237</u></b>	<b><u>15.8</u></b>	1231	15.9	1238	15.8	<b><u>1141</u></b>	<b><u>17.2</u></b>	1142	17.1	1139	17.2
433.milc	280	32.8	279	32.9	<b><u>280</u></b>	<b><u>32.8</u></b>	276	33.2	<b><u>276</u></b>	<b><u>33.2</u></b>	276	33.2
434.zeusmp	395	23.1	396	23.0	<b><u>396</u></b>	<b><u>23.0</u></b>	395	23.1	396	23.0	<b><u>396</u></b>	<b><u>23.0</u></b>
435.gromacs	<b><u>478</u></b>	<b><u>14.9</u></b>	478	14.9	478	14.9	470	15.2	<b><u>470</u></b>	<b><u>15.2</u></b>	471	15.2
436.cactusADM	93.8	127	95.2	126	<b><u>94.6</u></b>	<b><u>126</u></b>	<b><u>89.0</u></b>	<b><u>134</u></b>	89.2	134	87.6	136
437.leslie3d	463	20.3	<b><u>421</u></b>	<b><u>22.3</u></b>	419	22.4	463	20.3	<b><u>421</u></b>	<b><u>22.3</u></b>	419	22.4
444.namd	<b><u>633</u></b>	<b><u>12.7</u></b>	631	12.7	633	12.7	<b><u>633</u></b>	<b><u>12.7</u></b>	631	12.7	633	12.7
447.dealII	465	24.6	465	24.6	<b><u>465</u></b>	<b><u>24.6</u></b>	455	25.2	455	25.1	<b><u>455</u></b>	<b><u>25.1</u></b>
450.soplex	440	19.0	442	18.9	<b><u>440</u></b>	<b><u>18.9</u></b>	436	19.1	<b><u>436</u></b>	<b><u>19.1</u></b>	436	19.1
453.povray	283	18.8	283	18.8	<b><u>283</u></b>	<b><u>18.8</u></b>	217	24.5	219	24.3	<b><u>217</u></b>	<b><u>24.5</u></b>
454.calculix	446	18.5	449	18.4	<b><u>446</u></b>	<b><u>18.5</u></b>	428	19.3	<b><u>428</u></b>	<b><u>19.3</u></b>	428	19.3
459.GemsFDTD	373	28.5	<b><u>372</u></b>	<b><u>28.5</u></b>	339	31.3	238	44.6	<b><u>238</u></b>	<b><u>44.6</u></b>	238	44.5
465.tonto	579	17.0	581	16.9	<b><u>580</u></b>	<b><u>17.0</u></b>	472	20.9	<b><u>472</u></b>	<b><u>20.8</u></b>	473	20.8
470.lbm	388	35.4	387	35.5	<b><u>387</u></b>	<b><u>35.5</u></b>	381	36.1	<b><u>381</u></b>	<b><u>36.0</u></b>	381	36.0
481.wrf	402	27.8	<b><u>401</u></b>	<b><u>27.8</u></b>	400	27.9	364	30.7	<b><u>364</u></b>	<b><u>30.7</u></b>	393	28.4
482.sphinx3	877	22.2	871	22.4	<b><u>872</u></b>	<b><u>22.4</u></b>	877	22.2	871	22.4	<b><u>872</u></b>	<b><u>22.4</u></b>

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## General Notes

OMP\_NUM\_THREADS set to number of cores  
 KMP\_AFFINITY set to granularity=fine,scatter  
 KMP\_STACKSIZE set to 200M  
 For information about Fujitsu please visit: <http://www.fujitsu.com>  
 Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502



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## 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 -parallel -opt-prefetch

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



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## Peak Compiler Invocation

C benchmarks:  
icc -m64

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

Benchmarks using both Fortran and C:  
icc -m64 ifort -m64

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -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)  
-ansi-alias

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)  
-parallel -ansi-alias -auto-ilp32

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

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- -auto-ilp32

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 -auto-ilp32

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

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel

416.gamess: -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 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

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 -parallel

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)  
-inline-alloc -opt-malloc-options=3 -auto -unroll4

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: -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 -opt-prefetch -parallel -auto-ilp32

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

481.wrf: Same as 454.calculix

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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