



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = 25.5

PRIMERGY TX200 S6, Intel Xeon E5503, 2.0 GHz

SPECfp\_base2006 = 23.9

CPU2006 license: 19

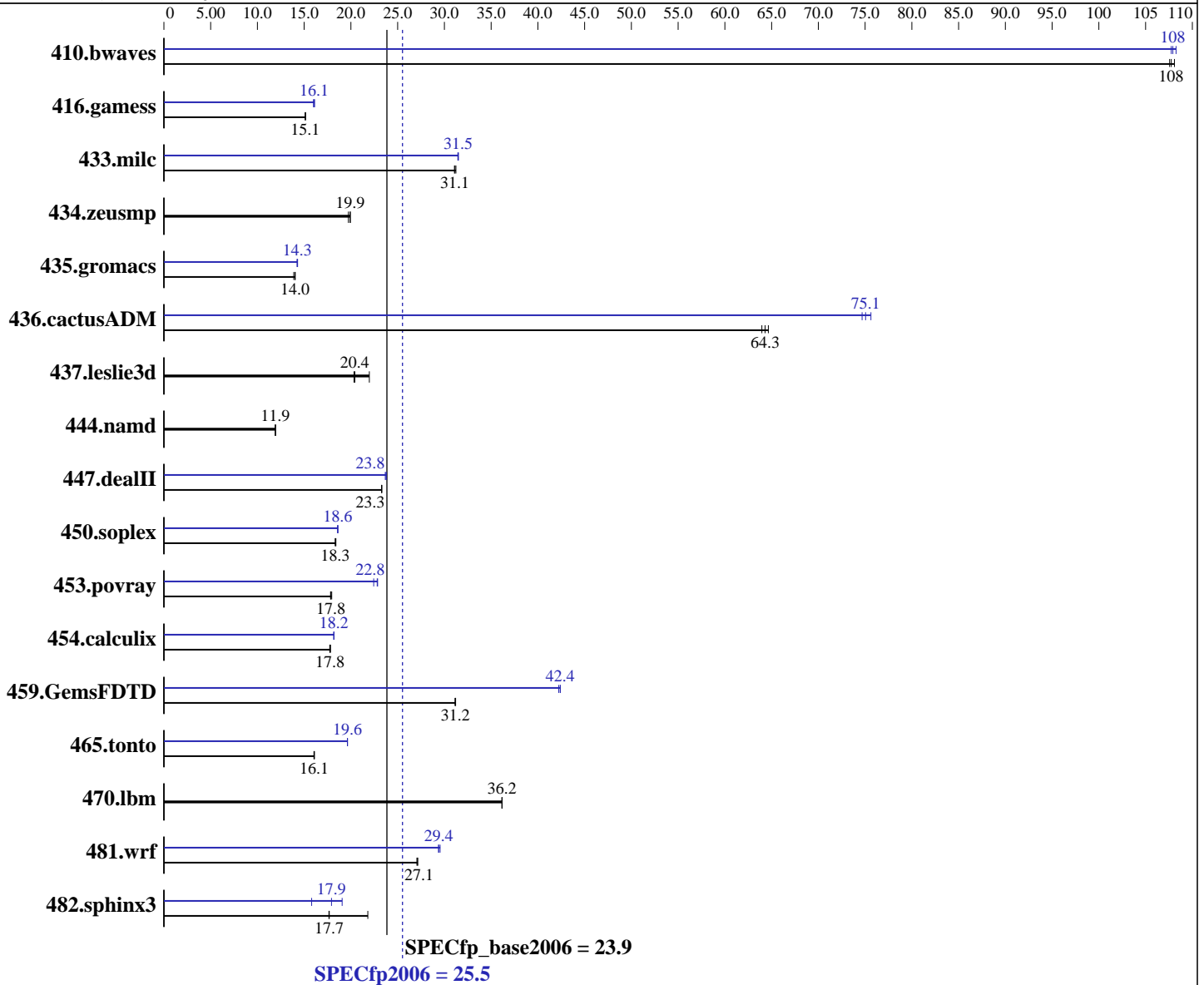
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Aug-2010

Hardware Availability: Jul-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: Yes  
 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 (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
Disk Subsystem: 1 x SATA, 160 GB, 5.4 krpm  
Other Hardware: None

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	126	108	<b>126</b>	<b>108</b>	126	108	<b>126</b>	<b>108</b>	126	108	126	108
416.gamess	1295	15.1	1293	15.1	<b>1295</b>	<b>15.1</b>	1216	16.1	<b>1217</b>	<b>16.1</b>	1224	16.0
433.milc	295	31.1	294	31.2	<b>295</b>	<b>31.1</b>	292	31.4	<b>292</b>	<b>31.5</b>	291	31.5
434.zeusmp	457	19.9	<b>457</b>	<b>19.9</b>	461	19.7	457	19.9	<b>457</b>	<b>19.9</b>	461	19.7
435.gromacs	514	13.9	509	14.0	<b>509</b>	<b>14.0</b>	499	14.3	501	14.3	<b>501</b>	<b>14.3</b>
436.cactusADM	<b>186</b>	<b>64.3</b>	185	64.6	187	64.0	158	75.6	<b>159</b>	<b>75.1</b>	160	74.7
437.leslie3d	<b>460</b>	<b>20.4</b>	462	20.3	428	22.0	<b>460</b>	<b>20.4</b>	462	20.3	428	22.0
444.namd	<b>672</b>	<b>11.9</b>	673	11.9	672	11.9	<b>672</b>	<b>11.9</b>	673	11.9	672	11.9
447.dealII	<b>491</b>	<b>23.3</b>	491	23.3	491	23.3	483	23.7	<b>481</b>	<b>23.8</b>	481	23.8
450.soplex	455	18.3	453	18.4	<b>455</b>	<b>18.3</b>	<b>449</b>	<b>18.6</b>	448	18.6	449	18.6
453.povray	296	17.9	298	17.8	<b>298</b>	<b>17.8</b>	237	22.4	<b>233</b>	<b>22.8</b>	233	22.9
454.calculix	463	17.8	465	17.7	<b>464</b>	<b>17.8</b>	454	18.2	<b>454</b>	<b>18.2</b>	454	18.2
459.GemsFDTD	340	31.2	341	31.1	<b>340</b>	<b>31.2</b>	<b>250</b>	<b>42.4</b>	250	42.4	251	42.2
465.tonto	611	16.1	<b>612</b>	<b>16.1</b>	613	16.0	<b>501</b>	<b>19.6</b>	501	19.6	501	19.6
470.lbm	<b>380</b>	<b>36.2</b>	380	36.2	380	36.2	<b>380</b>	<b>36.2</b>	380	36.2	380	36.2
481.wrf	412	27.1	413	27.1	<b>412</b>	<b>27.1</b>	378	29.5	380	29.4	<b>380</b>	<b>29.4</b>
482.sphinx3	894	21.8	1104	17.6	<b>1102</b>	<b>17.7</b>	1022	19.1	<b>1087</b>	<b>17.9</b>	1233	15.8

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

## Platform Notes

The system automatically configures the memory to run at 800 MHz.  
BIOS configuration:  
Data Reuse Optimization = Disable

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
KMP\_STACKSIZE set to 200M

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## General Notes (Continued)

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.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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

`-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

## 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: basepeak = yes`

`482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32  
-unroll2`

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`

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## Peak Optimization Flags (Continued)

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  
-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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