



SPEC® CFP2006 Result

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Fujitsu Siemens Computers

SPECfp®2006 = 22.3

CELSIUS R550, Intel Xeon E5440 processor

SPECfp_base2006 = 18.8

CPU2006 license: 22

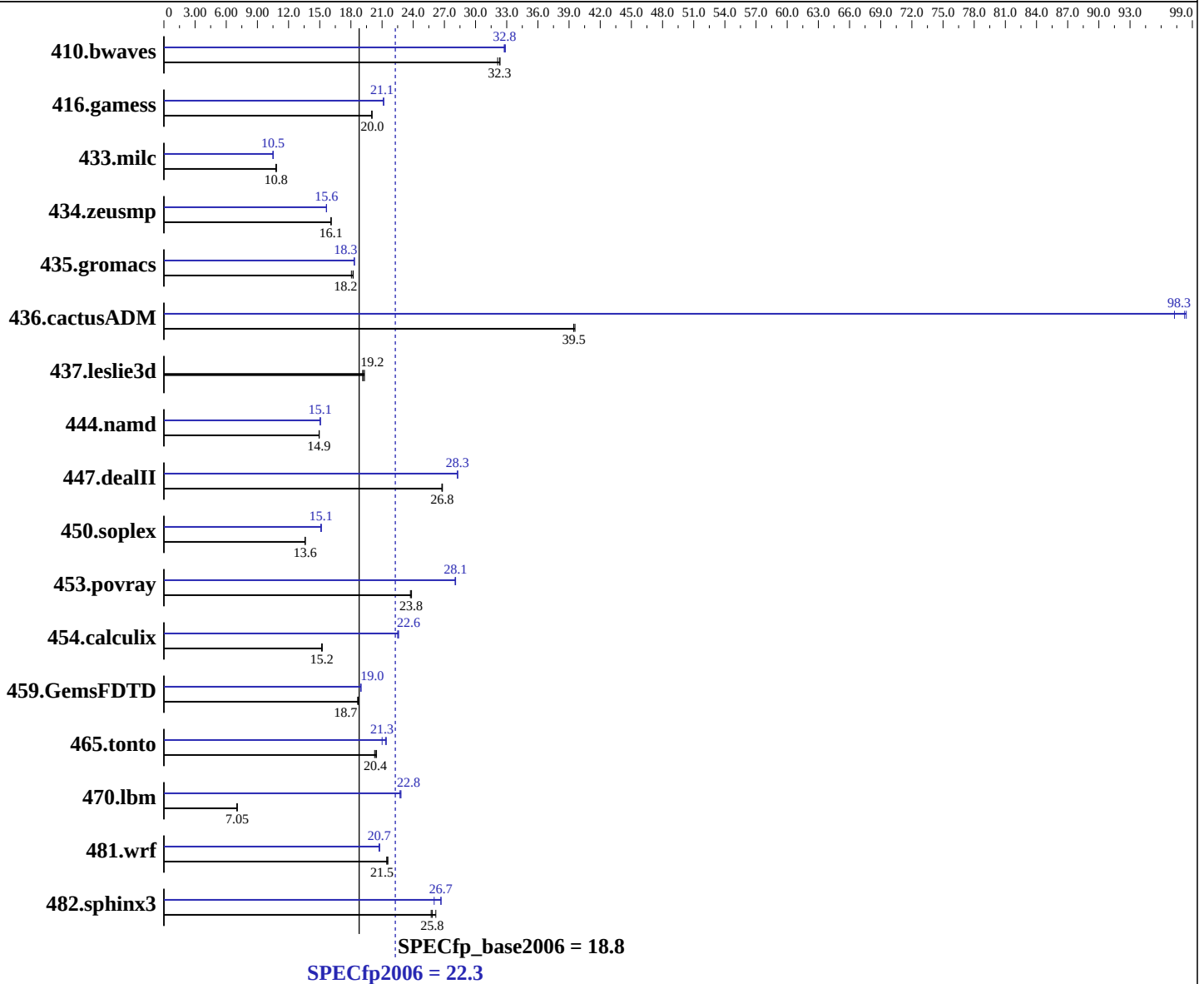
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Dec-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5440
CPU Characteristics:
CPU MHz: 2833
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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64, version 10.1, Build 20070913
Auto Parallel: Yes
File System: ext3
System State: Multi-User Run Level 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit

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Hardware (Continued)

L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1 x 400 GB SATA II 7200 RPM
Other Hardware: None

Software (Continued)

Other Software: binutils-2.17.50.0.5-0.1.x86_64

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	423	32.1	420	32.4	<u>421</u>	<u>32.3</u>	<u>414</u>	<u>32.8</u>	415	32.8	413	32.9
416.gamess	<u>978</u>	<u>20.0</u>	978	20.0	979	20.0	<u>926</u>	<u>21.1</u>	926	21.2	926	21.1
433.milc	851	10.8	847	10.8	<u>850</u>	<u>10.8</u>	<u>875</u>	<u>10.5</u>	<u>874</u>	<u>10.5</u>	872	10.5
434.zeusmp	566	16.1	565	16.1	<u>565</u>	<u>16.1</u>	582	15.6	581	15.7	<u>582</u>	<u>15.6</u>
435.gromacs	396	18.0	392	18.2	<u>392</u>	<u>18.2</u>	390	18.3	<u>390</u>	<u>18.3</u>	390	18.3
436.cactusADM	<u>303</u>	<u>39.5</u>	302	39.6	303	39.4	<u>122</u>	<u>98.3</u>	123	97.3	121	98.4
437.leslie3d	491	19.1	487	19.3	<u>489</u>	<u>19.2</u>	491	19.1	487	19.3	<u>489</u>	<u>19.2</u>
444.namd	536	15.0	537	14.9	<u>537</u>	<u>14.9</u>	533	15.0	532	15.1	<u>533</u>	<u>15.1</u>
447.dealII	<u>427</u>	<u>26.8</u>	427	26.8	428	26.8	<u>405</u>	<u>28.3</u>	405	28.3	405	28.3
450.soplex	613	13.6	613	13.6	<u>613</u>	<u>13.6</u>	<u>551</u>	<u>15.1</u>	550	15.2	552	15.1
453.povray	<u>224</u>	<u>23.8</u>	223	23.8	224	23.7	<u>189</u>	<u>28.1</u>	<u>190</u>	<u>28.0</u>	<u>190</u>	<u>28.1</u>
454.calculix	541	15.2	<u>542</u>	<u>15.2</u>	543	15.2	<u>365</u>	<u>22.6</u>	367	22.5	365	22.6
459.GemsFDTD	<u>568</u>	<u>18.7</u>	568	18.7	568	18.7	<u>560</u>	<u>19.0</u>	559	19.0	560	18.9
465.tonto	481	20.5	<u>483</u>	<u>20.4</u>	485	20.3	<u>460</u>	<u>21.4</u>	<u>461</u>	<u>21.3</u>	468	21.0
470.lbm	<u>1948</u>	<u>7.05</u>	1957	7.02	1945	7.07	<u>602</u>	<u>22.8</u>	<u>604</u>	<u>22.8</u>	604	22.7
481.wrf	518	21.6	<u>520</u>	<u>21.5</u>	521	21.4	<u>538</u>	<u>20.8</u>	<u>539</u>	<u>20.7</u>	<u>539</u>	<u>20.7</u>
482.sphinx3	745	26.2	758	25.7	<u>755</u>	<u>25.8</u>	<u>730</u>	<u>26.7</u>	<u>749</u>	<u>26.0</u>	<u>731</u>	<u>26.7</u>

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
OMP_NUM_THREADS set to number of cores (default).

Platform Notes

BIOS configuration:
Enhanced Speedstep Technology = Disable
Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable
SnoopFilter = Disable



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General Notes

All binaries were built with 64-bit Intel compiler except:
450.soplex, 470.lbm and 482.sphinx3 in peak were built with
32-bit Intel compiler by changing the path for include and library files.

For information about Fujitsu Siemens Computers please see:
<http://www.fujitsu-siemens.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.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



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Base Optimization Flags

C benchmarks:
-fast -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel

Peak Compiler Invocation

C benchmarks (except as noted below):
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

433.milc: icc

C++ benchmarks (except as noted below):
icpc

450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include

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

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Peak Portability Flags (Continued)

459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -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) -fast -fno-alias
-auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -parallel -prefetch -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20080124.html>

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

<http://www.spec.org/cpu2006/flags/flags-ic101-linux-intel64.20080124.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.

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