



SPEC® CFP2006 Result

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Fujitsu

SPECfp®2006 = 36.9

PRIMERGY BX620 S6, Intel Xeon E5620, 2.40 GHz

SPECfp_base2006 = 34.4

CPU2006 license: 19

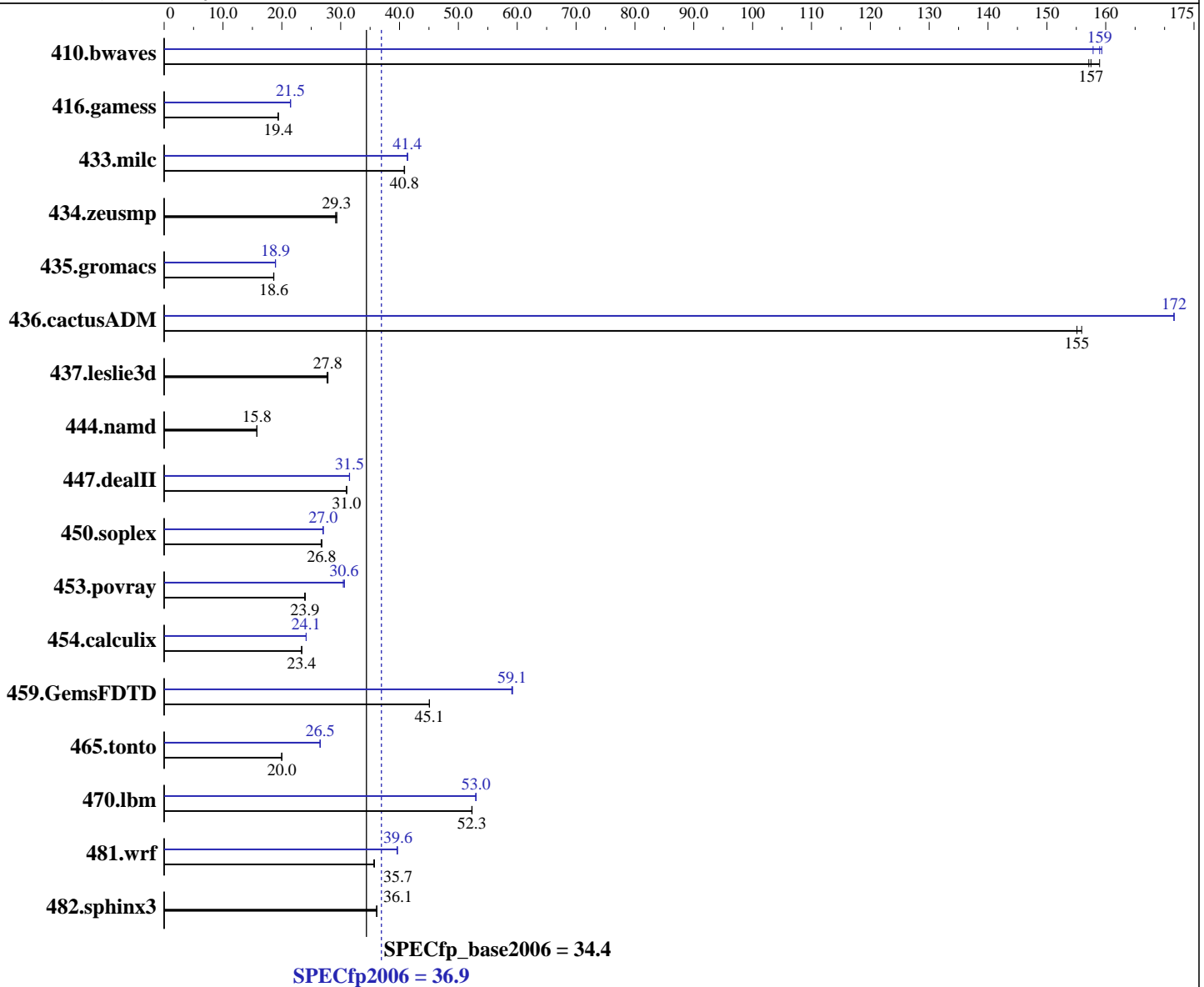
Test date: Aug-2010

Test sponsor: Fujitsu

Hardware Availability: Jul-2010

Tested by: Fujitsu

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon E5620
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
 CPU MHz: 2400
 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) with SP1, Kernel 2.6.32.12-0.7-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: 12 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 SAS, 300 GB, 10000 RPM
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 | 86.3 | 157 | 85.5 | 159 | 86.5 | 157 | 85.3 | 159 | 86.1 | 158 | 85.5 | 159 |
| 416.gamess | 1009 | 19.4 | 1010 | 19.4 | 1010 | 19.4 | 912 | 21.5 | 912 | 21.5 | 911 | 21.5 |
| 433.milc | 225 | 40.8 | 225 | 40.8 | 225 | 40.9 | 222 | 41.4 | 222 | 41.3 | 222 | 41.4 |
| 434.zeusmp | 312 | 29.1 | 310 | 29.3 | 310 | 29.3 | 312 | 29.1 | 310 | 29.3 | 310 | 29.3 |
| 435.gromacs | 383 | 18.7 | 384 | 18.6 | 383 | 18.6 | 377 | 18.9 | 378 | 18.9 | 377 | 18.9 |
| 436.cactusADM | 77.0 | 155 | 76.6 | 156 | 77.0 | 155 | 69.6 | 172 | 69.6 | 172 | 69.6 | 172 |
| 437.leslie3d | 340 | 27.7 | 338 | 27.8 | 338 | 27.8 | 340 | 27.7 | 338 | 27.8 | 338 | 27.8 |
| 444.namd | 508 | 15.8 | 509 | 15.8 | 509 | 15.7 | 508 | 15.8 | 509 | 15.8 | 509 | 15.7 |
| 447.dealII | 369 | 31.0 | 369 | 31.0 | 369 | 31.0 | 363 | 31.5 | 363 | 31.5 | 363 | 31.5 |
| 450.soplex | 311 | 26.8 | 311 | 26.8 | 313 | 26.7 | 309 | 27.0 | 308 | 27.0 | 309 | 27.0 |
| 453.povray | 222 | 23.9 | 222 | 24.0 | 223 | 23.9 | 174 | 30.6 | 175 | 30.4 | 174 | 30.6 |
| 454.calculix | 353 | 23.4 | 353 | 23.4 | 353 | 23.4 | 342 | 24.1 | 342 | 24.1 | 342 | 24.1 |
| 459.GemsFDTD | 235 | 45.1 | 235 | 45.1 | 235 | 45.1 | 179 | 59.2 | 180 | 59.1 | 179 | 59.1 |
| 465.tonto | 492 | 20.0 | 492 | 20.0 | 492 | 20.0 | 371 | 26.5 | 372 | 26.5 | 371 | 26.5 |
| 470.lbm | 263 | 52.3 | 263 | 52.3 | 263 | 52.3 | 259 | 53.0 | 259 | 53.0 | 260 | 52.9 |
| 481.wrf | 313 | 35.7 | 313 | 35.7 | 314 | 35.6 | 282 | 39.6 | 282 | 39.6 | 282 | 39.7 |
| 482.sphinx3 | 540 | 36.1 | 540 | 36.1 | 539 | 36.2 | 540 | 36.1 | 540 | 36.1 | 539 | 36.2 |

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 1067 MHz.
BIOS configuration:
Data Reuse Optimization = Disable
Intel HT Technology = Disable
Performance/Power Setting = Traditional



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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

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.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

Base Optimization Flags

C benchmarks:

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

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Base Optimization Flags (Continued)

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

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:

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Peak Optimization Flags (Continued)

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

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-calloc -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



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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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