



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 36.4

PRIMERGY RX600 S5, Intel Xeon L7555, 1.87 GHz

SPECfp_base2006 = 32.7

CPU2006 license: 19

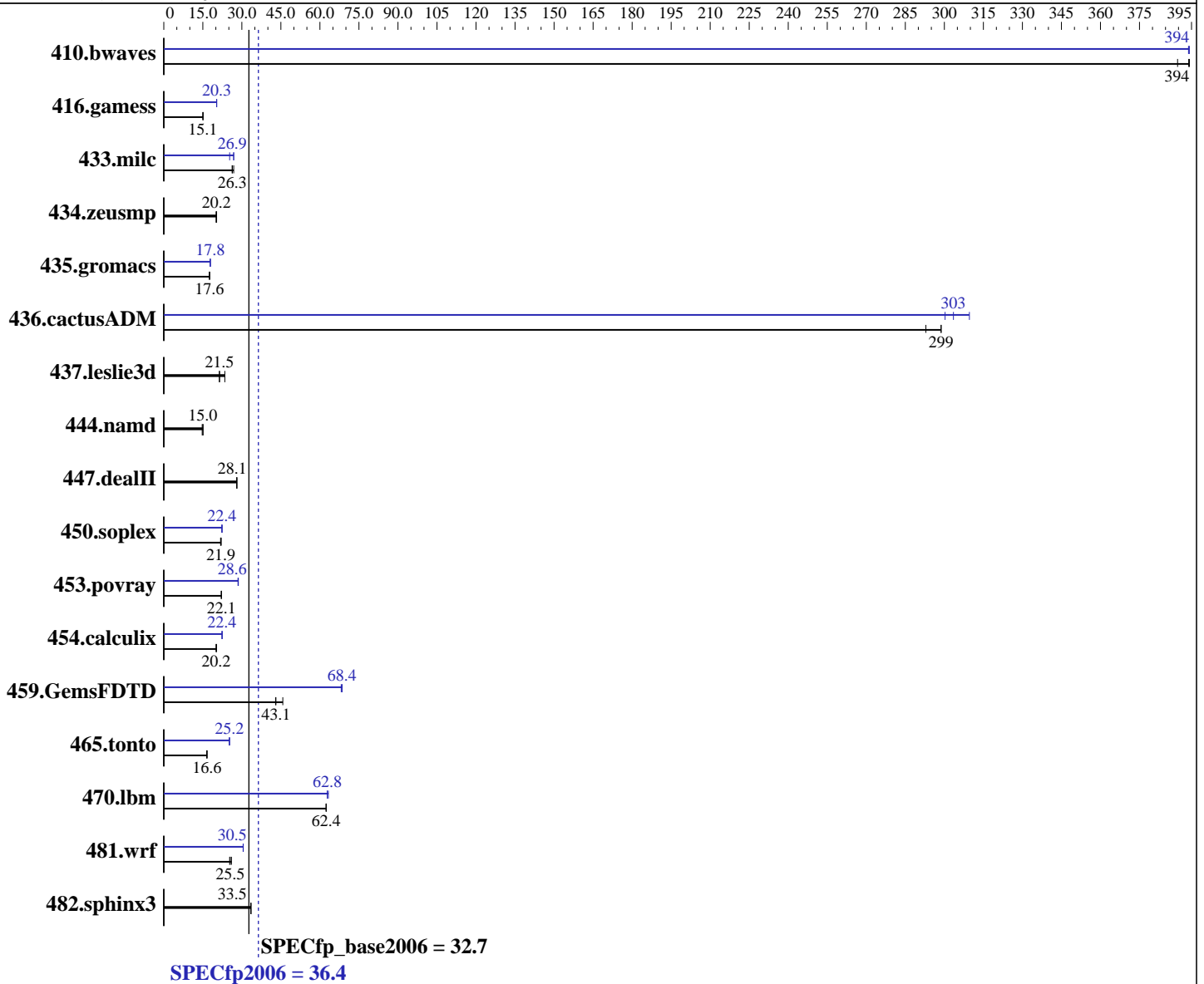
Test date: Jun-2010

Test sponsor: Fujitsu

Hardware Availability: Jun-2010

Tested by: Fujitsu

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon L7555
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip
 CPU(s) orderable: 2,3,4 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: 24 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (64x4 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 | 34.9 | 390 | 34.5 | 394 | 34.5 | 394 | 34.5 | 394 | 34.5 | 394 | 34.5 | 394 |
| 416.gamess | 1299 | 15.1 | 1300 | 15.1 | 1302 | 15.0 | 963 | 20.3 | 964 | 20.3 | 964 | 20.3 |
| 433.milc | 342 | 26.9 | 349 | 26.3 | 349 | 26.3 | 363 | 25.3 | 342 | 26.9 | 342 | 26.9 |
| 434.zeusmp | 453 | 20.1 | 450 | 20.2 | 448 | 20.3 | 453 | 20.1 | 450 | 20.2 | 448 | 20.3 |
| 435.gromacs | 406 | 17.6 | 409 | 17.5 | 405 | 17.6 | 400 | 17.8 | 401 | 17.8 | 398 | 17.9 |
| 436.cactusADM | 40.8 | 293 | 40.0 | 299 | 40.0 | 299 | 39.8 | 300 | 38.6 | 310 | 39.4 | 303 |
| 437.leslie3d | 441 | 21.3 | 401 | 23.5 | 438 | 21.5 | 441 | 21.3 | 401 | 23.5 | 438 | 21.5 |
| 444.namd | 533 | 15.0 | 544 | 14.8 | 532 | 15.1 | 533 | 15.0 | 544 | 14.8 | 532 | 15.1 |
| 447.dealII | 408 | 28.1 | 408 | 28.1 | 408 | 28.1 | 408 | 28.1 | 408 | 28.1 | 408 | 28.1 |
| 450.soplex | 380 | 21.9 | 382 | 21.8 | 378 | 22.1 | 373 | 22.4 | 374 | 22.3 | 373 | 22.4 |
| 453.povray | 240 | 22.1 | 241 | 22.1 | 240 | 22.1 | 186 | 28.7 | 186 | 28.6 | 186 | 28.6 |
| 454.calculix | 409 | 20.2 | 411 | 20.1 | 407 | 20.3 | 368 | 22.4 | 368 | 22.4 | 368 | 22.4 |
| 459.GemsFDTD | 247 | 43.0 | 246 | 43.1 | 232 | 45.7 | 155 | 68.5 | 155 | 68.4 | 156 | 68.2 |
| 465.tonto | 598 | 16.5 | 592 | 16.6 | 591 | 16.6 | 390 | 25.2 | 390 | 25.2 | 390 | 25.2 |
| 470.lbm | 220 | 62.4 | 220 | 62.4 | 220 | 62.4 | 219 | 62.8 | 217 | 63.3 | 219 | 62.8 |
| 481.wrf | 437 | 25.5 | 430 | 26.0 | 441 | 25.3 | 366 | 30.5 | 366 | 30.6 | 366 | 30.5 |
| 482.sphinx3 | 582 | 33.5 | 582 | 33.5 | 583 | 33.4 | 582 | 33.5 | 582 | 33.5 | 583 | 33.4 |

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 978 MHz.
BIOS configuration:
Intel HT Technology = 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>
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.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

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Base Optimization Flags (Continued)

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:

444.namd: `basepeak = yes`

447.dealII: `basepeak = yes`

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Peak Optimization Flags (Continued)

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

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.20100330.02.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.20100330.02.xml>



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