



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 100

PRIMERGY RX2540 M1, Intel Xeon E5-2620 v3, 2.4 GHz

SPECfp_base2006 = 94.6

CPU2006 license: 19

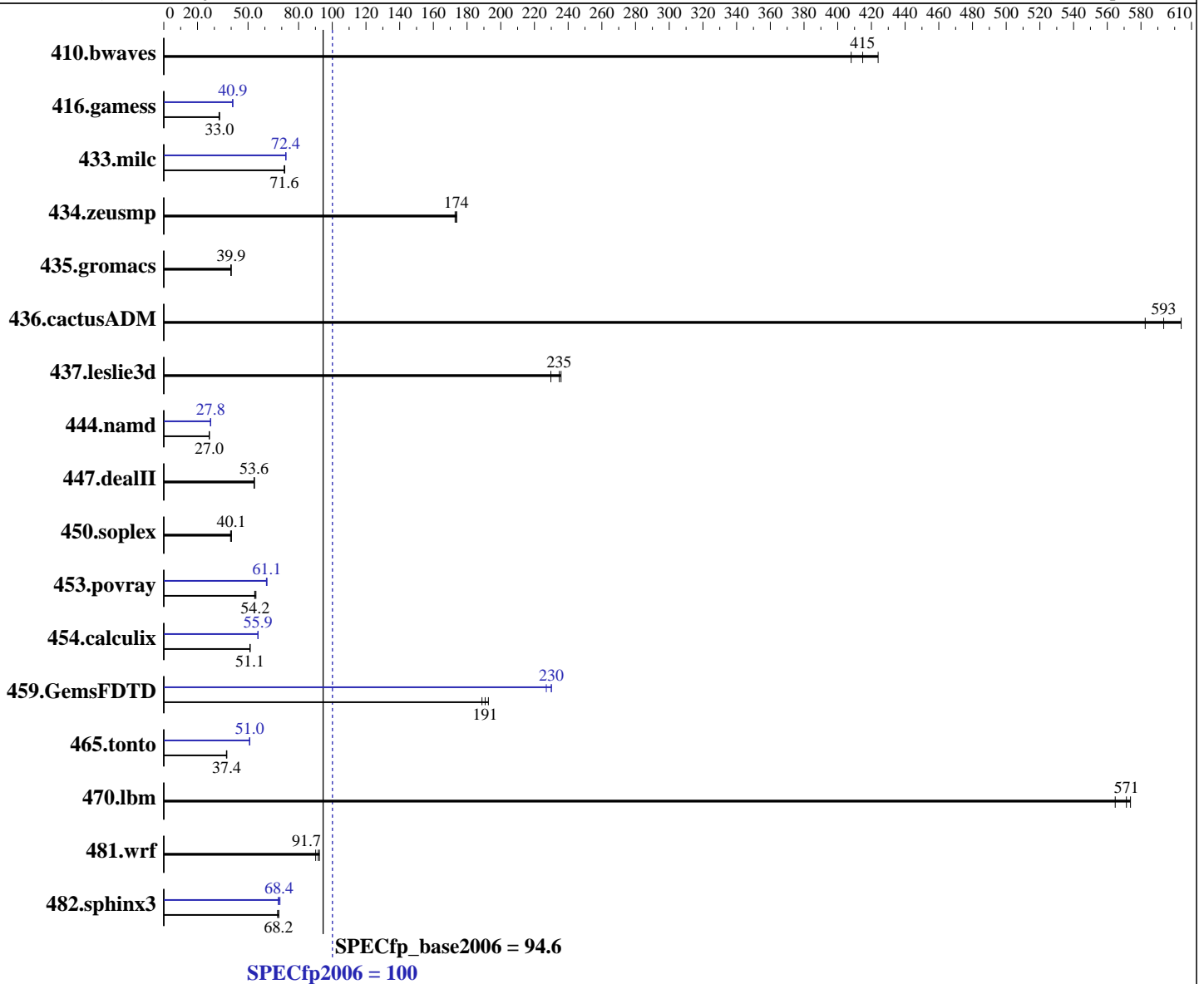
Test date: Nov-2014

Test sponsor: Fujitsu

Hardware Availability: Sep-2014

Tested by: Fujitsu

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2620 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chip
 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: Red Hat Enterprise Linux Server release 7.0 (Maipo)
 Kernel 3.10.0-123.8.1.el7.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: xfs

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L3 Cache: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
 Other Hardware: None

System State: Run level 3 (multi-user)
 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 | 33.3 | 408 | 32.8 | 415 | 32.1 | 424 | 33.3 | 408 | 32.8 | 415 | 32.1 | 424 |
| 416.gamess | 594 | 33.0 | 598 | 32.8 | 591 | 33.1 | 478 | 40.9 | 479 | 40.9 | 479 | 40.9 |
| 433.milc | 128 | 71.8 | 128 | 71.5 | 128 | 71.6 | 127 | 72.4 | 127 | 72.3 | 127 | 72.5 |
| 434.zeusmp | 52.4 | 174 | 52.6 | 173 | 52.3 | 174 | 52.4 | 174 | 52.6 | 173 | 52.3 | 174 |
| 435.gromacs | 179 | 39.9 | 179 | 39.8 | 179 | 40.0 | 179 | 39.9 | 179 | 39.8 | 179 | 40.0 |
| 436.cactusADM | 20.5 | 583 | 20.1 | 593 | 19.8 | 604 | 20.5 | 583 | 20.1 | 593 | 19.8 | 604 |
| 437.leslie3d | 40.9 | 230 | 40.0 | 235 | 39.9 | 236 | 40.9 | 230 | 40.0 | 235 | 39.9 | 236 |
| 444.namd | 297 | 27.0 | 297 | 27.0 | 297 | 27.0 | 289 | 27.8 | 289 | 27.8 | 289 | 27.8 |
| 447.dealII | 212 | 53.9 | 214 | 53.5 | 213 | 53.6 | 212 | 53.9 | 214 | 53.5 | 213 | 53.6 |
| 450.soplex | 208 | 40.1 | 210 | 39.6 | 208 | 40.1 | 208 | 40.1 | 210 | 39.6 | 208 | 40.1 |
| 453.povray | 98.6 | 53.9 | 98.1 | 54.2 | 97.3 | 54.7 | 87.0 | 61.1 | 87.4 | 60.9 | 86.9 | 61.2 |
| 454.calculix | 161 | 51.1 | 161 | 51.3 | 161 | 51.1 | 147 | 56.0 | 148 | 55.9 | 148 | 55.9 |
| 459.GemsFDTD | 55.1 | 193 | 55.6 | 191 | 56.2 | 189 | 46.7 | 227 | 46.1 | 230 | 46.1 | 230 |
| 465.tonto | 265 | 37.2 | 263 | 37.4 | 263 | 37.4 | 193 | 50.9 | 193 | 51.0 | 193 | 51.0 |
| 470.lbm | 24.0 | 571 | 24.3 | 565 | 23.9 | 574 | 24.0 | 571 | 24.3 | 565 | 23.9 | 574 |
| 481.wrf | 122 | 91.7 | 124 | 90.1 | 121 | 92.4 | 122 | 91.7 | 124 | 90.1 | 121 | 92.4 |
| 482.sphinx3 | 286 | 68.2 | 289 | 67.5 | 286 | 68.2 | 283 | 69.0 | 285 | 68.4 | 287 | 67.9 |

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS configuration:
 Energy Performance = Performance
 Utilization Profile = Unbalanced
 QPI snoop mode: Home Snoop
 COD Enable = Disabled, Early Snoop = Disabled
 CPU C1E Support = Disabled



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General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact,1,0"

LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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



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Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias

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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Default-Platform-Flags.20141216.html>



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You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Default-Platform-Flags.20141216.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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