



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 77.2

PRIMERGY RX200 S7, Intel Xeon E5-2660, 2.20 GHz

SPECfp_base2006 = 72.9

CPU2006 license: 19

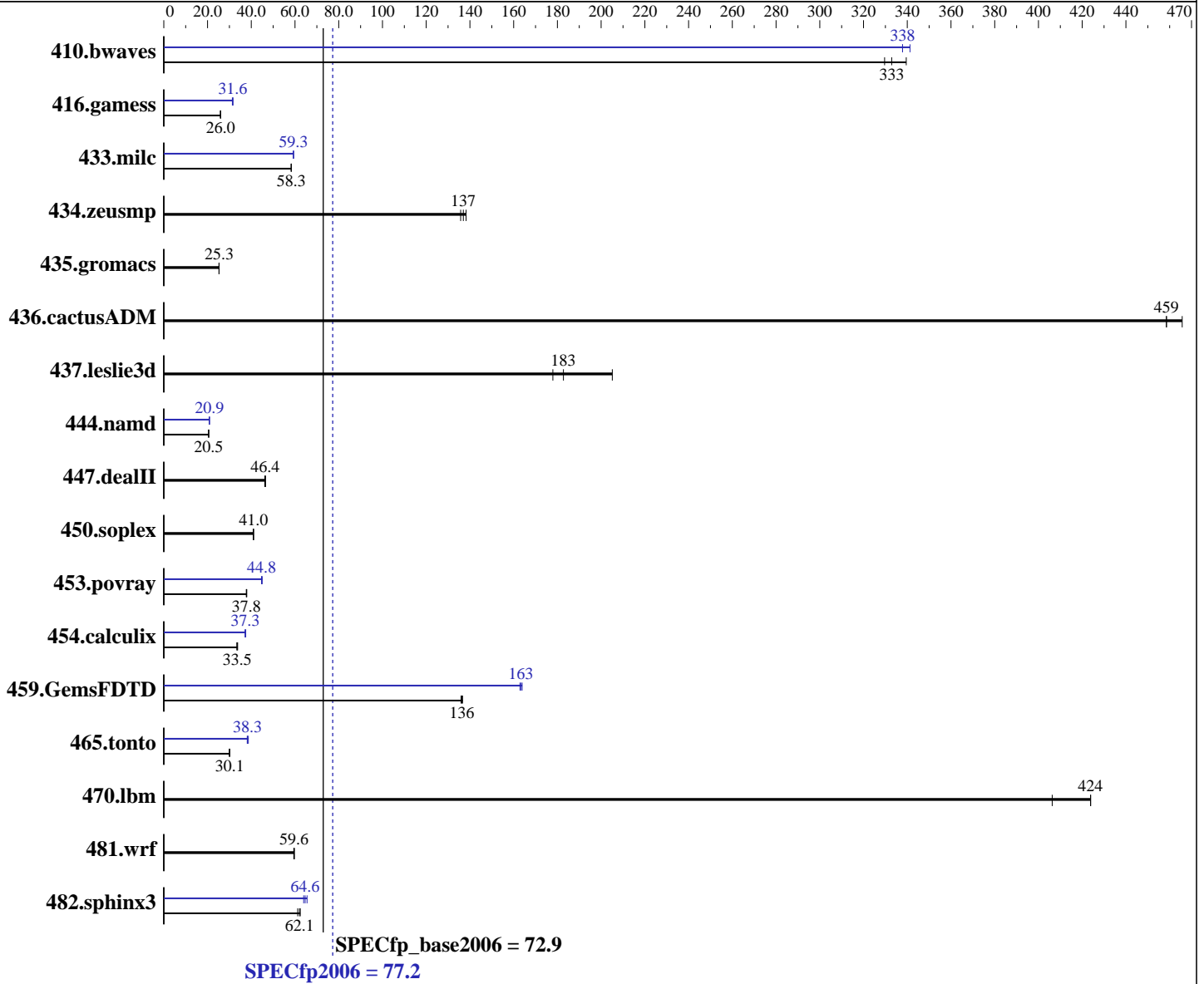
Test date: Dec-2011

Test sponsor: Fujitsu

Hardware Availability: Mar-2012

Tested by: Fujitsu

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2660
 CPU Characteristics: Intel Turbo Boost Technology up to 3.0 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
 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 | 40.8 | 333 | 40.0 | 340 | 41.2 | 330 | 40.2 | 338 | 40.2 | 338 | 39.8 | 341 |
| 416.gamess | 754 | 26.0 | 757 | 25.9 | 752 | 26.0 | 620 | 31.6 | 625 | 31.3 | 620 | 31.6 |
| 433.milc | 158 | 58.3 | 158 | 58.3 | 157 | 58.3 | 155 | 59.3 | 155 | 59.3 | 155 | 59.3 |
| 434.zeusmp | 65.8 | 138 | 67.0 | 136 | 66.4 | 137 | 65.8 | 138 | 67.0 | 136 | 66.4 | 137 |
| 435.gromacs | 283 | 25.2 | 282 | 25.3 | 282 | 25.3 | 283 | 25.2 | 282 | 25.3 | 282 | 25.3 |
| 436.cactusADM | 26.1 | 459 | 26.1 | 459 | 25.7 | 466 | 26.1 | 459 | 26.1 | 459 | 25.7 | 466 |
| 437.leslie3d | 51.4 | 183 | 52.8 | 178 | 45.8 | 205 | 51.4 | 183 | 52.8 | 178 | 45.8 | 205 |
| 444.namd | 391 | 20.5 | 391 | 20.5 | 391 | 20.5 | 385 | 20.9 | 385 | 20.8 | 385 | 20.9 |
| 447.dealII | 247 | 46.4 | 246 | 46.5 | 248 | 46.2 | 247 | 46.4 | 246 | 46.5 | 248 | 46.2 |
| 450.soplex | 203 | 41.1 | 203 | 41.0 | 204 | 40.9 | 203 | 41.1 | 203 | 41.0 | 204 | 40.9 |
| 453.povray | 141 | 37.8 | 141 | 37.8 | 140 | 38.0 | 118 | 45.0 | 119 | 44.8 | 119 | 44.7 |
| 454.calculix | 246 | 33.5 | 247 | 33.4 | 244 | 33.8 | 220 | 37.5 | 222 | 37.2 | 221 | 37.3 |
| 459.GemsFDTD | 77.8 | 136 | 77.6 | 137 | 78.0 | 136 | 64.9 | 163 | 64.7 | 164 | 65.1 | 163 |
| 465.tonto | 329 | 29.9 | 327 | 30.1 | 326 | 30.2 | 258 | 38.2 | 255 | 38.7 | 257 | 38.3 |
| 470.lbm | 32.4 | 424 | 32.4 | 424 | 33.8 | 406 | 32.4 | 424 | 32.4 | 424 | 33.8 | 406 |
| 481.wrf | 187 | 59.7 | 188 | 59.5 | 187 | 59.6 | 187 | 59.7 | 188 | 59.5 | 187 | 59.6 |
| 482.sphinx3 | 318 | 61.2 | 312 | 62.4 | 314 | 62.1 | 302 | 64.6 | 305 | 64.0 | 297 | 65.5 |

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:
 Intel HT Technology = Disable
 Frequency Floor Override = Enable

General Notes

Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,scatter"
 LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

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General Notes (Continued)

OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
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:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -static -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: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel`

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(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: -xAVX(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: -xAVX -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/Fujitsu-Platform.20120320.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>



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

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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

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