



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 81.3

PRIMERGY BX924 S3, Intel Xeon E5-2670, 2.60 GHz

SPECfp_base2006 = 77.0

CPU2006 license: 19

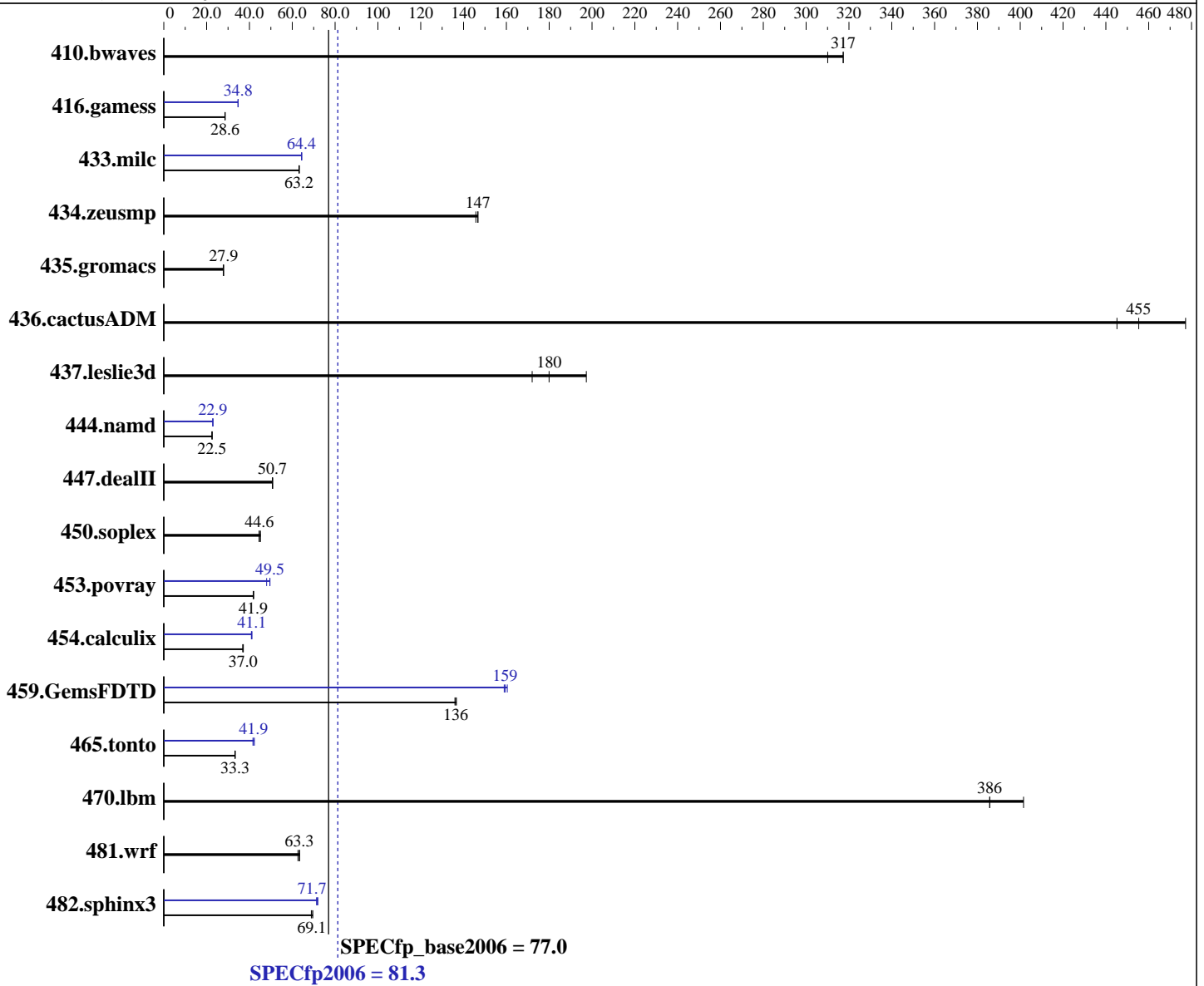
Test date: Feb-2012

Test sponsor: Fujitsu

Hardware Availability: Mar-2012

Tested by: Fujitsu

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2670
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 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: PRIMERGY SX940 S1 for hw_disk

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 | 42.8 | 317 | 42.8 | 317 | 43.8 | 310 | 42.8 | 317 | 42.8 | 317 | 43.8 | 310 |
| 416.gamess | 685 | 28.6 | 685 | 28.6 | 684 | 28.6 | 563 | 34.8 | 563 | 34.8 | 566 | 34.6 |
| 433.milc | 145 | 63.2 | 145 | 63.2 | 145 | 63.2 | 143 | 64.4 | 143 | 64.4 | 143 | 64.3 |
| 434.zeusmp | 62.0 | 147 | 62.0 | 147 | 62.4 | 146 | 62.0 | 147 | 62.0 | 147 | 62.4 | 146 |
| 435.gromacs | 256 | 27.9 | 257 | 27.8 | 256 | 27.9 | 256 | 27.9 | 257 | 27.8 | 256 | 27.9 |
| 436.cactusADM | 26.8 | 445 | 25.0 | 477 | 26.2 | 455 | 26.8 | 445 | 25.0 | 477 | 26.2 | 455 |
| 437.leslie3d | 47.6 | 197 | 54.6 | 172 | 52.2 | 180 | 47.6 | 197 | 54.6 | 172 | 52.2 | 180 |
| 444.namd | 356 | 22.5 | 356 | 22.5 | 356 | 22.5 | 350 | 22.9 | 350 | 22.9 | 350 | 22.9 |
| 447.dealII | 226 | 50.7 | 225 | 50.9 | 226 | 50.7 | 226 | 50.7 | 225 | 50.9 | 226 | 50.7 |
| 450.soplex | 185 | 45.2 | 187 | 44.5 | 187 | 44.6 | 185 | 45.2 | 187 | 44.5 | 187 | 44.6 |
| 453.povray | 127 | 41.9 | 127 | 42.0 | 127 | 41.8 | 111 | 48.0 | 107 | 49.5 | 107 | 49.6 |
| 454.calculix | 223 | 37.0 | 222 | 37.1 | 224 | 36.9 | 201 | 41.1 | 201 | 41.1 | 202 | 40.9 |
| 459.GemsFDTD | 77.6 | 137 | 77.8 | 136 | 78.0 | 136 | 66.7 | 159 | 66.5 | 159 | 66.1 | 160 |
| 465.tonto | 296 | 33.3 | 296 | 33.3 | 296 | 33.3 | 236 | 41.6 | 233 | 42.3 | 235 | 41.9 |
| 470.lbm | 35.6 | 386 | 35.6 | 386 | 34.2 | 402 | 35.6 | 386 | 35.6 | 386 | 34.2 | 402 |
| 481.wrf | 176 | 63.3 | 178 | 62.7 | 176 | 63.5 | 176 | 63.3 | 178 | 62.7 | 176 | 63.5 |
| 482.sphinx3 | 280 | 69.6 | 283 | 68.9 | 282 | 69.1 | 273 | 71.3 | 272 | 71.7 | 271 | 72.0 |

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.lelie3d: -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: basepeak = yes

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/Intel-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.00.html>

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

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

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.00.xml>

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info@spec.org

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

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