



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 74.9

PRIMERGY RX300 S8, Intel Xeon E5-2620 v2, 2.10 GHz

SPECfp_base2006 = 72.1

CPU2006 license: 19

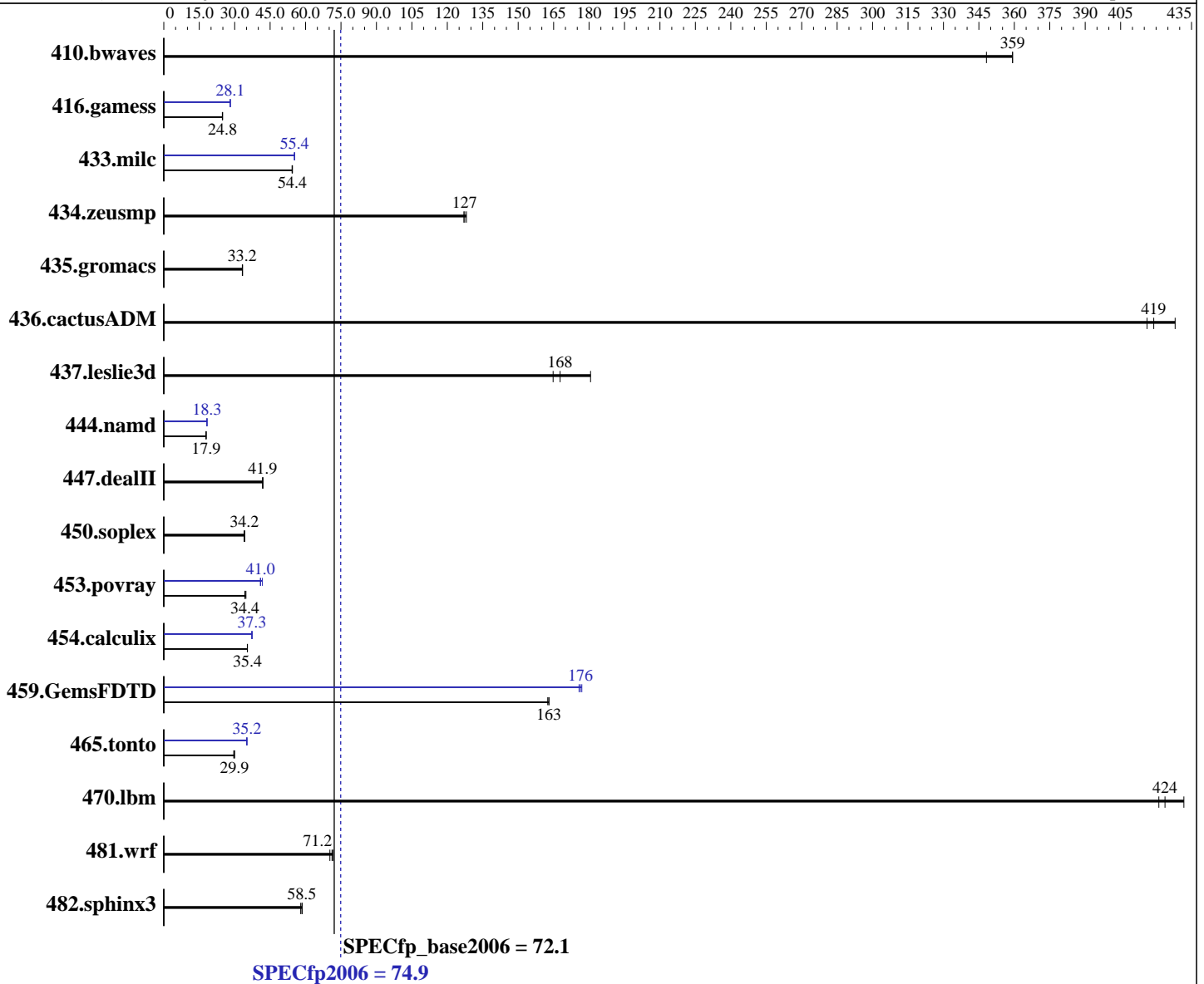
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Sep-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2620 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.11.1.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

Continued on next page



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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 PC3-12800R-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 | 39.0 | 348 | 37.8 | 359 | 37.8 | 359 | 39.0 | 348 | 37.8 | 359 | 37.8 | 359 |
| 416.gamess | 789 | 24.8 | 790 | 24.8 | 786 | 24.9 | 697 | 28.1 | 695 | 28.2 | 696 | 28.1 |
| 433.milc | 169 | 54.4 | 169 | 54.4 | 169 | 54.3 | 166 | 55.2 | 166 | 55.4 | 166 | 55.4 |
| 434.zeusmp | 71.6 | 127 | 71.4 | 127 | 71.0 | 128 | 71.6 | 127 | 71.4 | 127 | 71.0 | 128 |
| 435.gromacs | 215 | 33.2 | 215 | 33.2 | 214 | 33.4 | 215 | 33.2 | 215 | 33.2 | 214 | 33.4 |
| 436.cactusADM | 28.7 | 416 | 27.9 | 428 | 28.5 | 419 | 28.7 | 416 | 27.9 | 428 | 28.5 | 419 |
| 437.leslie3d | 56.0 | 168 | 52.0 | 181 | 57.0 | 165 | 56.0 | 168 | 52.0 | 181 | 57.0 | 165 |
| 444.namd | 448 | 17.9 | 448 | 17.9 | 448 | 17.9 | 440 | 18.2 | 438 | 18.3 | 438 | 18.3 |
| 447.dealII | 273 | 41.9 | 274 | 41.8 | 273 | 41.9 | 273 | 41.9 | 274 | 41.8 | 273 | 41.9 |
| 450.soplex | 244 | 34.2 | 245 | 34.0 | 244 | 34.2 | 244 | 34.2 | 245 | 34.0 | 244 | 34.2 |
| 453.povray | 155 | 34.4 | 155 | 34.3 | 153 | 34.8 | 130 | 40.9 | 127 | 41.7 | 130 | 41.0 |
| 454.calculix | 233 | 35.4 | 233 | 35.3 | 233 | 35.4 | 221 | 37.4 | 221 | 37.3 | 222 | 37.2 |
| 459.GemsFDTD | 65.3 | 163 | 65.1 | 163 | 65.1 | 163 | 60.0 | 177 | 60.4 | 176 | 60.2 | 176 |
| 465.tonto | 329 | 29.9 | 329 | 29.9 | 332 | 29.6 | 279 | 35.2 | 280 | 35.2 | 281 | 35.1 |
| 470.lbm | 32.6 | 421 | 32.4 | 424 | 31.8 | 432 | 32.6 | 421 | 32.4 | 424 | 31.8 | 432 |
| 481.wrf | 157 | 71.2 | 159 | 70.3 | 156 | 71.6 | 157 | 71.2 | 159 | 70.3 | 156 | 71.6 |
| 482.sphinx3 | 336 | 57.9 | 333 | 58.6 | 333 | 58.5 | 336 | 57.9 | 333 | 58.6 | 333 | 58.5 |

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:
 Energy Performance = Performance
 Utilization Profile = Unbalanced

General Notes

Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,compact,1,0"
 LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

Continued on next page



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General Notes (Continued)

OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

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:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xAVX -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: `-xAVX(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: `basepeak = yes`

C++ benchmarks:

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Peak Optimization Flags (Continued)

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.dealIII: 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-

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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20130924.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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