



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]_rate2006 = 101

PRIMERGY TX1330 M1, Intel Core i3-4330, 3.50 GHz

SPECfp_rate_base2006 = 98.0

CPU2006 license: 19

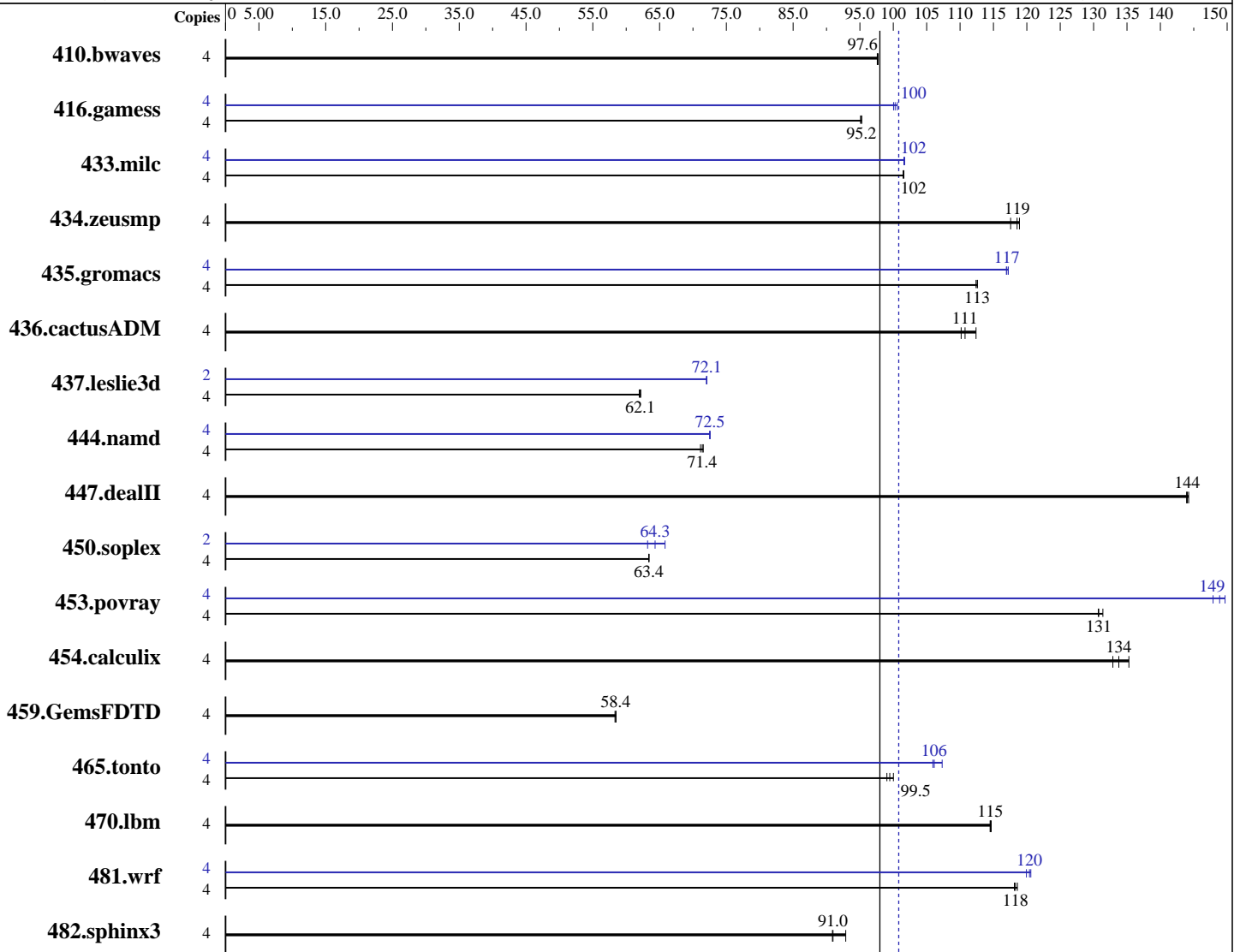
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jul-2014

Hardware Availability: Jul-2014

Software Availability: Nov-2013



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Hardware

CPU Name: Intel Core i3-4330
 CPU Characteristics:
 CPU MHz: 3500
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 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 6.5 (Santiago)
 2.6.32-431.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: No
 File System: ext4

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L3 Cache: 4 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
 Other Hardware: None

System State: Run level 5 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---------------|--------|------------|-------------|------------|-------------|------------|-------------|--------|------------|-------------|------------|-------------|------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 4 | <u>557</u> | <u>97.6</u> | 557 | 97.6 | 556 | 97.7 | 4 | <u>557</u> | <u>97.6</u> | 557 | 97.6 | 556 | 97.7 |
| 416.gamess | 4 | 824 | 95.1 | 822 | 95.3 | <u>822</u> | <u>95.2</u> | 4 | 778 | 101 | 783 | 100 | <u>781</u> | <u>100</u> |
| 433.milc | 4 | 362 | 101 | <u>362</u> | <u>102</u> | 361 | 102 | 4 | <u>361</u> | <u>102</u> | 361 | 102 | 361 | 102 |
| 434.zeusmp | 4 | 310 | 118 | <u>307</u> | <u>119</u> | 306 | 119 | 4 | 310 | 118 | <u>307</u> | <u>119</u> | 306 | 119 |
| 435.gromacs | 4 | 254 | 113 | <u>254</u> | <u>113</u> | 254 | 112 | 4 | <u>244</u> | <u>117</u> | 244 | 117 | 244 | 117 |
| 436.cactusADM | 4 | 425 | 112 | 434 | 110 | <u>432</u> | <u>111</u> | 4 | 425 | 112 | 434 | 110 | <u>432</u> | <u>111</u> |
| 437.leslie3d | 4 | 607 | 62.0 | <u>606</u> | <u>62.1</u> | 605 | 62.2 | 2 | 261 | 72.0 | 261 | 72.1 | <u>261</u> | <u>72.1</u> |
| 444.namd | 4 | <u>449</u> | <u>71.4</u> | 448 | 71.5 | 451 | 71.1 | 4 | <u>442</u> | <u>72.5</u> | 442 | 72.6 | 442 | 72.5 |
| 447.dealII | 4 | 318 | 144 | <u>318</u> | <u>144</u> | 317 | 144 | 4 | 318 | 144 | <u>318</u> | <u>144</u> | 317 | 144 |
| 450.soplex | 4 | <u>526</u> | <u>63.4</u> | 526 | 63.4 | 526 | 63.4 | 2 | <u>259</u> | <u>64.3</u> | 253 | 65.8 | 264 | 63.2 |
| 453.povray | 4 | 162 | 131 | 163 | 131 | <u>163</u> | <u>131</u> | 4 | 142 | 150 | 144 | 148 | <u>143</u> | <u>149</u> |
| 454.calculix | 4 | <u>247</u> | <u>134</u> | 244 | 135 | 248 | 133 | 4 | <u>247</u> | <u>134</u> | 244 | 135 | 248 | 133 |
| 459.GemsFDTD | 4 | 728 | 58.3 | <u>726</u> | <u>58.4</u> | 726 | 58.5 | 4 | 728 | 58.3 | <u>726</u> | <u>58.4</u> | 726 | 58.5 |
| 465.tonto | 4 | <u>396</u> | <u>99.5</u> | 397 | 99.0 | 394 | 100 | 4 | 367 | 107 | 372 | 106 | <u>371</u> | <u>106</u> |
| 470.lbm | 4 | <u>480</u> | <u>115</u> | 480 | 114 | 479 | 115 | 4 | <u>480</u> | <u>115</u> | 480 | 114 | 479 | 115 |
| 481.wrf | 4 | 378 | 118 | 377 | 119 | <u>378</u> | <u>118</u> | 4 | <u>371</u> | <u>120</u> | 373 | 120 | 370 | 121 |
| 482.sphinx3 | 4 | 839 | 92.9 | 858 | 90.9 | <u>857</u> | <u>91.0</u> | 4 | 839 | 92.9 | 858 | 90.9 | <u>857</u> | <u>91.0</u> |

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64:/SPECcpu2006/sh"

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General Notes (Continued)

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
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches
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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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

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)
 -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
 -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2)
 -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
 -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2)
 -opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
 -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
 -O3(pass 2) -no-prec-div(pass 2)
 -opt-mem-layout-trans=3(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

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Peak Optimization Flags (Continued)

437.leslie3d: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

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) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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-revB.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-revB.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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