



SPEC® CFP2006 Result

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Fujitsu

SPECfp®2006 = 64.1

PRIMERGY TX140 S2, Intel Core i3-4330, 3.50 GHz

SPECfp_base2006 = 63.0

CPU2006 license: 19

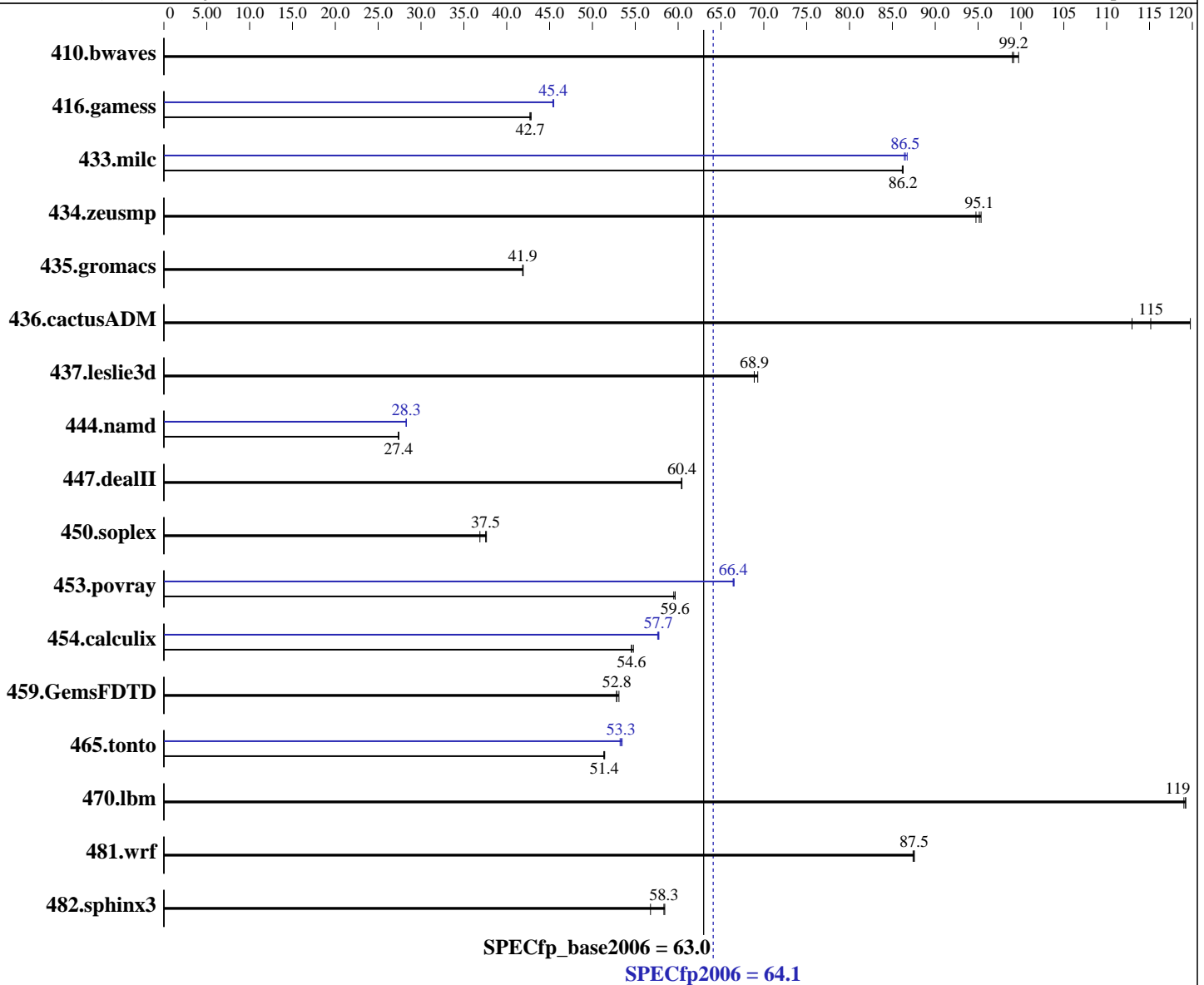
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Sep-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



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

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: 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 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 | 137 | 99.0 | 136 | 99.7 | <u>137</u> | <u>99.2</u> | 137 | 99.0 | 136 | 99.7 | <u>137</u> | <u>99.2</u> |
| 416.gamess | <u>458</u> | <u>42.7</u> | 458 | 42.7 | 457 | 42.8 | <u>431</u> | <u>45.4</u> | 430 | 45.5 | 431 | 45.4 |
| 433.milc | 107 | 86.2 | 106 | 86.2 | <u>106</u> | <u>86.2</u> | 106 | 86.7 | 106 | 86.4 | <u>106</u> | <u>86.5</u> |
| 434.zeusmp | 95.4 | 95.3 | <u>95.6</u> | <u>95.1</u> | 96.0 | 94.8 | 95.4 | 95.3 | <u>95.6</u> | <u>95.1</u> | 96.0 | 94.8 |
| 435.gromacs | <u>171</u> | <u>41.9</u> | 171 | 41.9 | 170 | 41.9 | <u>171</u> | <u>41.9</u> | 171 | 41.9 | 170 | 41.9 |
| 436.cactusADM | <u>104</u> | <u>115</u> | 106 | 113 | 99.8 | 120 | <u>104</u> | <u>115</u> | 106 | 113 | 99.8 | 120 |
| 437.leslie3d | 136 | 69.3 | 136 | 68.9 | <u>136</u> | <u>68.9</u> | 136 | 69.3 | 136 | 68.9 | <u>136</u> | <u>68.9</u> |
| 444.namd | <u>293</u> | <u>27.4</u> | 293 | 27.4 | 293 | 27.4 | 283 | 28.3 | <u>284</u> | <u>28.3</u> | 284 | 28.3 |
| 447.dealII | <u>189</u> | <u>60.4</u> | 189 | 60.4 | 189 | 60.4 | <u>189</u> | <u>60.4</u> | 189 | 60.4 | 189 | 60.4 |
| 450.soplex | 222 | 37.6 | <u>222</u> | <u>37.5</u> | 226 | 36.9 | 222 | 37.6 | <u>222</u> | <u>37.5</u> | 226 | 36.9 |
| 453.povray | 89.4 | 59.5 | <u>89.2</u> | <u>59.6</u> | 89.2 | 59.7 | <u>80.1</u> | <u>66.4</u> | 80.0 | 66.5 | 80.1 | 66.4 |
| 454.calculix | 151 | 54.8 | 151 | 54.6 | <u>151</u> | <u>54.6</u> | 143 | 57.8 | 143 | 57.6 | <u>143</u> | <u>57.7</u> |
| 459.GemsFDTD | 201 | 52.8 | 200 | 53.1 | <u>201</u> | <u>52.8</u> | 201 | 52.8 | 200 | 53.1 | <u>201</u> | <u>52.8</u> |
| 465.tonto | <u>192</u> | <u>51.4</u> | 192 | 51.3 | 191 | 51.4 | 184 | 53.5 | 185 | 53.2 | <u>184</u> | <u>53.3</u> |
| 470.lbm | <u>115</u> | <u>119</u> | 115 | 119 | 115 | 119 | <u>115</u> | <u>119</u> | 115 | 119 | 115 | 119 |
| 481.wrf | <u>128</u> | <u>87.5</u> | 128 | 87.4 | 128 | 87.6 | <u>128</u> | <u>87.5</u> | 128 | 87.4 | 128 | 87.6 |
| 482.sphinx3 | 333 | 58.4 | <u>334</u> | <u>58.3</u> | 343 | 56.8 | 333 | 58.4 | <u>334</u> | <u>58.3</u> | 343 | 56.8 |

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"

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"

OMP_NUM_THREADS = "2"

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.:

Continued on next page

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Page 2



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General Notes (Continued)

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

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

Continued on next page



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Base Optimization Flags (Continued)

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: 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) -prof-use(pass 2)
-fno-alias -auto-ilp32

Continued on next page



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Peak Optimization Flags (Continued)

447.deallI: 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: 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)
-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-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 other inquiries, please contact webmaster@spec.org.

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