



SPEC[®] CFP2006 Result

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Fujitsu

PRIMERGY RX2520 M1, Intel Xeon E5-2440 v2, 1.90 GHz

SPECfp[®]2006 = 70.4

SPECfp_base2006 = 67.8

CPU2006 license: 19

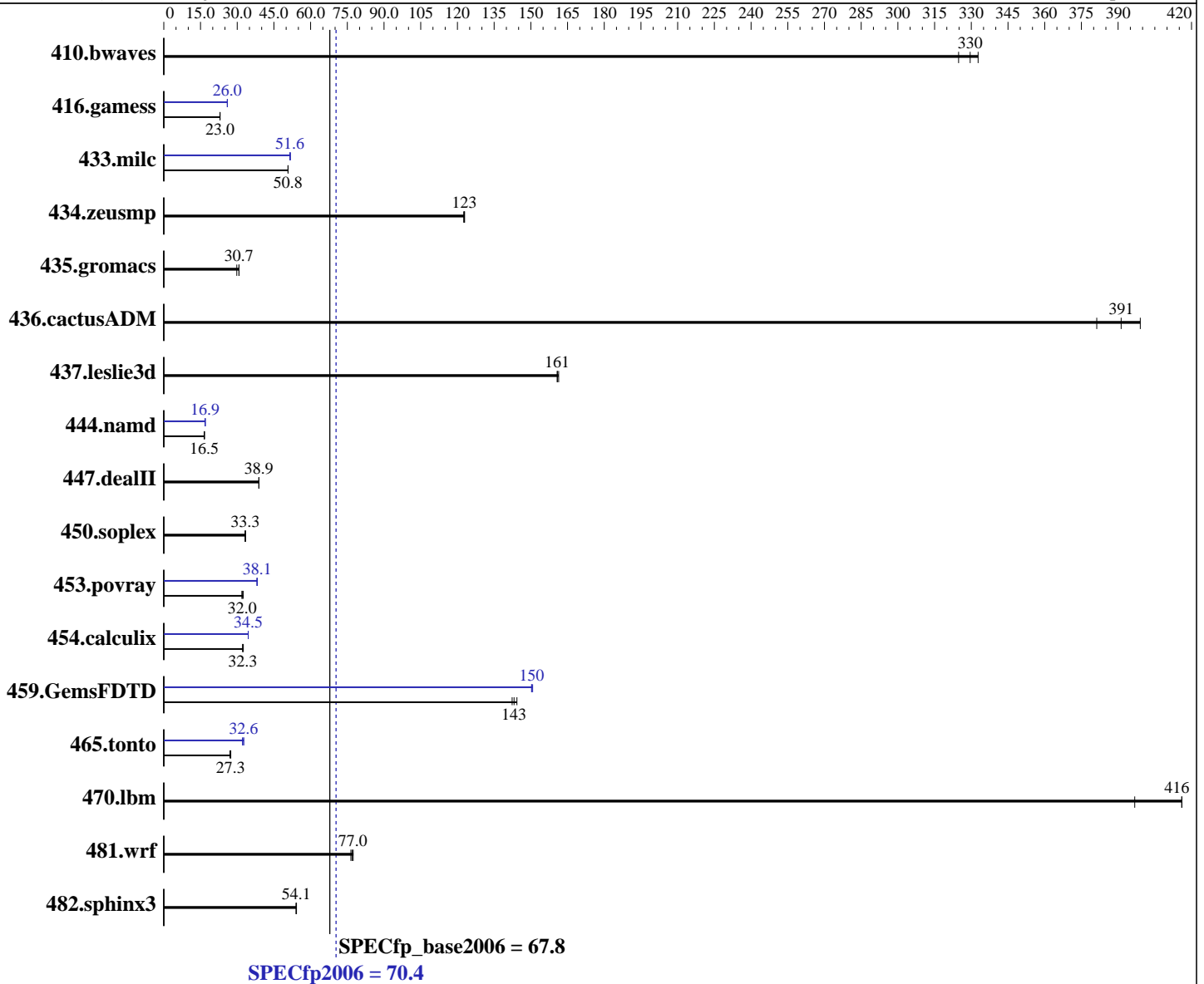
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2014

Hardware Availability: Feb-2014

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2440 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 1900
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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

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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

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L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 192 GB (12 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
Other Hardware: None

System State: Run level 5 (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	41.8	325	40.8	333	<u>41.2</u>	<u>330</u>	41.8	325	40.8	333	<u>41.2</u>	<u>330</u>
416.gamess	854	22.9	<u>852</u>	<u>23.0</u>	852	23.0	755	25.9	<u>754</u>	<u>26.0</u>	754	26.0
433.milc	181	50.7	<u>181</u>	<u>50.8</u>	181	50.8	<u>178</u>	<u>51.6</u>	178	51.5	177	51.8
434.zeusmp	<u>74.1</u>	<u>123</u>	74.3	123	74.0	123	<u>74.1</u>	<u>123</u>	74.3	123	74.0	123
435.gromacs	<u>233</u>	<u>30.7</u>	232	30.8	239	29.8	<u>233</u>	<u>30.7</u>	232	30.8	239	29.8
436.cactusADM	31.3	381	29.9	399	<u>30.5</u>	<u>391</u>	31.3	381	29.9	399	<u>30.5</u>	<u>391</u>
437.leslie3d	58.5	161	58.3	161	<u>58.5</u>	<u>161</u>	58.5	161	58.3	161	<u>58.5</u>	<u>161</u>
444.namd	482	16.6	<u>485</u>	<u>16.5</u>	485	16.5	475	16.9	474	16.9	<u>474</u>	<u>16.9</u>
447.dealII	<u>294</u>	<u>38.9</u>	294	38.9	294	38.9	<u>294</u>	<u>38.9</u>	294	38.9	294	38.9
450.soplex	<u>250</u>	<u>33.3</u>	251	33.2	250	33.4	<u>250</u>	<u>33.3</u>	251	33.2	250	33.4
453.povray	<u>166</u>	<u>32.0</u>	164	32.5	167	31.9	139	38.2	140	38.0	<u>139</u>	<u>38.1</u>
454.calculix	254	32.5	<u>256</u>	<u>32.3</u>	256	32.2	239	34.5	239	34.5	<u>239</u>	<u>34.5</u>
459.GemsFDTD	74.5	142	<u>74.1</u>	<u>143</u>	73.5	144	<u>70.6</u>	<u>150</u>	70.6	150	70.4	151
465.tonto	364	27.0	<u>360</u>	<u>27.3</u>	359	27.4	301	32.7	<u>302</u>	<u>32.6</u>	306	32.1
470.lbm	34.6	397	<u>33.0</u>	<u>416</u>	33.0	416	34.6	397	<u>33.0</u>	<u>416</u>	33.0	416
481.wrf	<u>145</u>	<u>77.0</u>	146	76.4	144	77.4	<u>145</u>	<u>77.0</u>	146	76.4	144	77.4
482.sphinx3	<u>360</u>	<u>54.1</u>	359	54.2	361	54.1	<u>360</u>	<u>54.1</u>	359	54.2	361	54.1

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"

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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 RedHat EL 6.4

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.deallI: -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.20131009.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.20131009.xml>



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