



SPEC[®] CFP2006 Result

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Fujitsu

PRIMERGY BX924 S4, Intel Xeon E5-2650L v2, 1.70 GHz

SPECfp[®]2006 = **69.7**

SPECfp_base2006 = **66.9**

CPU2006 license: 19

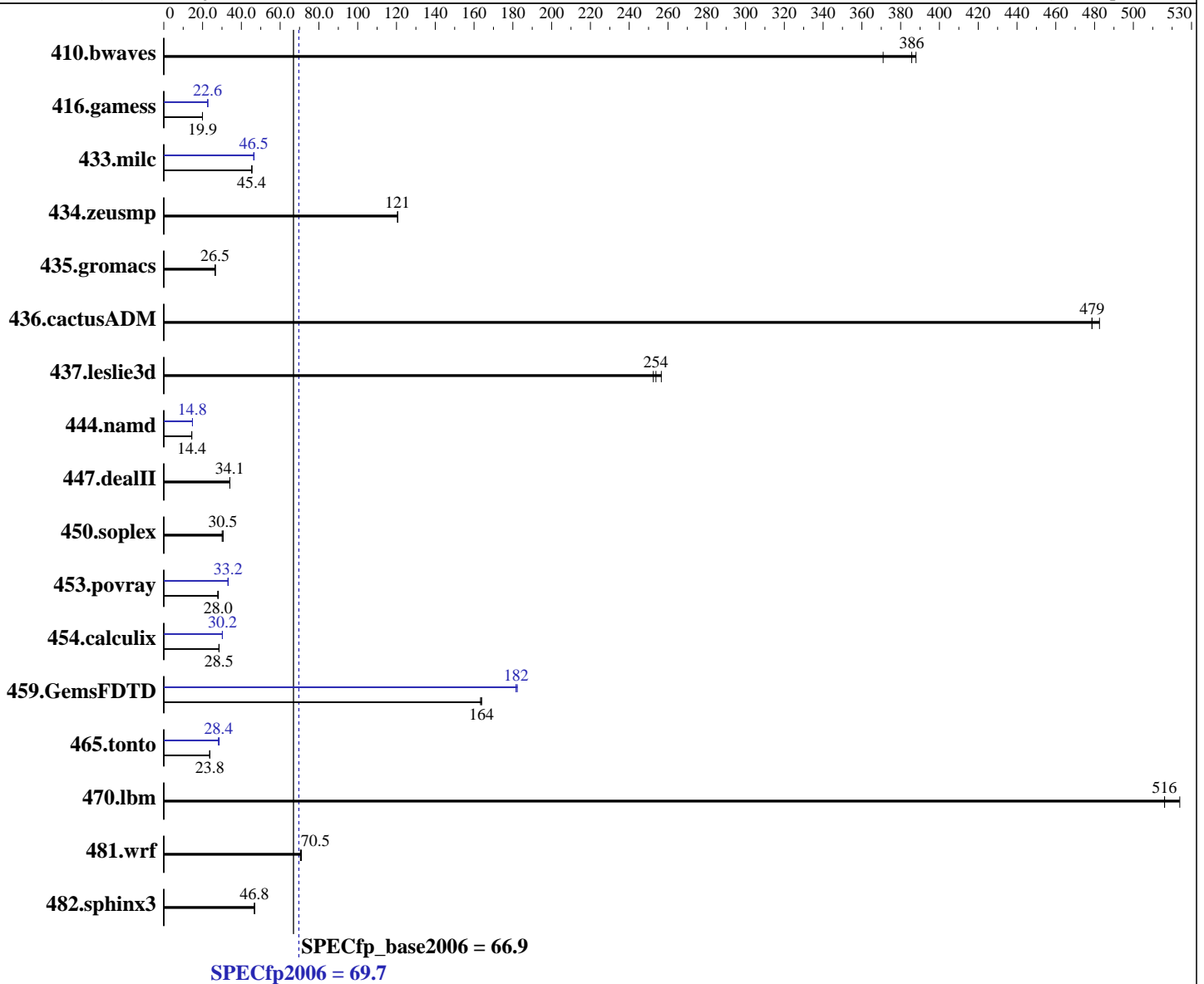
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Oct-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2650L v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.10 GHz
 CPU MHz: 1700
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3L-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	35.0	388	<u>35.2</u>	<u>386</u>	36.6	371	35.0	388	<u>35.2</u>	<u>386</u>	36.6	371
416.gamess	983	19.9	<u>982</u>	<u>19.9</u>	981	20.0	<u>865</u>	<u>22.6</u>	865	22.6	863	22.7
433.milc	202	45.4	<u>202</u>	<u>45.4</u>	202	45.4	198	46.3	197	46.6	<u>197</u>	<u>46.5</u>
434.zeusmp	75.4	121	75.5	121	<u>75.5</u>	<u>121</u>	75.4	121	75.5	121	<u>75.5</u>	<u>121</u>
435.gromacs	270	26.4	<u>269</u>	<u>26.5</u>	268	26.6	270	26.4	<u>269</u>	<u>26.5</u>	268	26.6
436.cactusADM	25.0	479	24.8	483	<u>25.0</u>	<u>479</u>	25.0	479	24.8	483	<u>25.0</u>	<u>479</u>
437.leslie3d	<u>37.0</u>	<u>254</u>	37.2	252	36.6	257	<u>37.0</u>	<u>254</u>	37.2	252	36.6	257
444.namd	557	14.4	<u>557</u>	<u>14.4</u>	556	14.4	542	14.8	<u>543</u>	<u>14.8</u>	543	14.8
447.dealII	336	34.1	336	34.1	<u>336</u>	<u>34.1</u>	336	34.1	336	34.1	<u>336</u>	<u>34.1</u>
450.soplex	277	30.1	<u>273</u>	<u>30.5</u>	273	30.6	277	30.1	<u>273</u>	<u>30.5</u>	273	30.6
453.povray	<u>190</u>	<u>28.0</u>	189	28.2	191	27.8	160	33.3	<u>160</u>	<u>33.2</u>	161	33.0
454.calculix	289	28.6	290	28.4	<u>290</u>	<u>28.5</u>	<u>273</u>	<u>30.2</u>	273	30.2	274	30.2
459.GemsFDTD	64.8	164	65.0	163	<u>64.8</u>	<u>164</u>	58.4	182	58.2	182	<u>58.4</u>	<u>182</u>
465.tonto	414	23.8	<u>414</u>	<u>23.8</u>	416	23.6	349	28.2	344	28.6	<u>347</u>	<u>28.4</u>
470.lbm	<u>26.6</u>	<u>516</u>	26.6	516	26.2	524	<u>26.6</u>	<u>516</u>	26.6	516	26.2	524
481.wrf	157	71.0	159	70.4	<u>158</u>	<u>70.5</u>	157	71.0	159	70.4	<u>158</u>	<u>70.5</u>
482.sphinx3	417	46.7	<u>416</u>	<u>46.8</u>	416	46.8	417	46.7	<u>416</u>	<u>46.8</u>	416	46.8

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"

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 = "20"

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.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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