



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = **114**

PRIMERGY RX2540 M1, Intel Xeon E5-2643 v3, 3.4 GHz

SPECfp_base2006 = **111**

CPU2006 license: 19

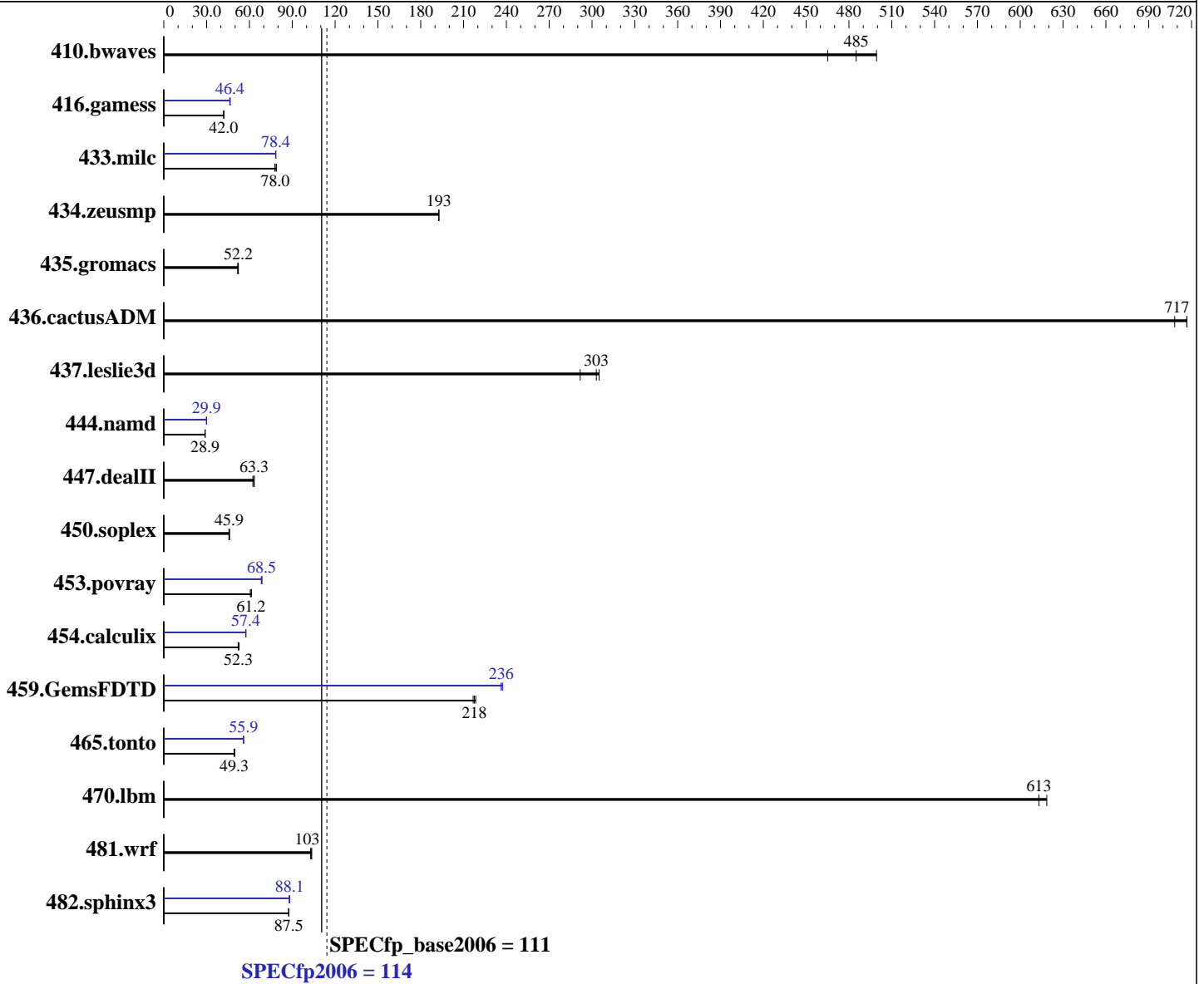
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Aug-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2643 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3400
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 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: SLES11 Linux Enterprise Server SP3 (x86_64) 3.0.76-0.11-default
 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
 System State: Run level 3 (multi-user)

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
 Other Hardware: None

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	29.2	465	27.2	499	<u>28.0</u>	<u>485</u>	29.2	465	27.2	499	<u>28.0</u>	<u>485</u>
416.gamess	466	42.0	466	42.0	<u>466</u>	<u>42.0</u>	421	46.5	<u>422</u>	<u>46.4</u>	424	46.2
433.milc	<u>118</u>	<u>78.0</u>	118	77.9	116	79.0	117	78.6	117	78.3	<u>117</u>	<u>78.4</u>
434.zeusmp	<u>47.2</u>	<u>193</u>	47.2	193	47.2	193	<u>47.2</u>	<u>193</u>	47.2	193	47.2	193
435.gromacs	137	52.2	<u>137</u>	<u>52.2</u>	138	51.7	137	52.2	<u>137</u>	<u>52.2</u>	138	51.7
436.cactusADM	16.7	717	16.9	708	<u>16.7</u>	<u>717</u>	16.7	717	16.9	708	<u>16.7</u>	<u>717</u>
437.leslie3d	32.2	292	30.8	305	<u>31.0</u>	<u>303</u>	32.2	292	30.8	305	<u>31.0</u>	<u>303</u>
444.namd	<u>277</u>	<u>28.9</u>	277	28.9	277	28.9	268	29.9	<u>268</u>	<u>29.9</u>	268	29.9
447.dealII	183	62.4	<u>181</u>	<u>63.3</u>	181	63.3	183	62.4	<u>181</u>	<u>63.3</u>	181	63.3
450.soplex	183	45.6	<u>182</u>	<u>45.9</u>	181	46.1	183	45.6	<u>182</u>	<u>45.9</u>	181	46.1
453.povray	87.8	60.6	86.7	61.4	<u>86.9</u>	<u>61.2</u>	77.3	68.8	<u>77.6</u>	<u>68.5</u>	77.9	68.3
454.calculix	<u>158</u>	<u>52.3</u>	156	52.8	158	52.1	143	57.6	<u>144</u>	<u>57.4</u>	144	57.4
459.GemsFDTD	48.6	219	<u>48.8</u>	<u>218</u>	49.0	217	<u>44.9</u>	<u>236</u>	44.7	237	44.9	236
465.tonto	198	49.7	<u>200</u>	<u>49.3</u>	200	49.2	176	55.8	176	55.9	<u>176</u>	<u>55.9</u>
470.lbm	<u>22.4</u>	<u>613</u>	22.2	619	22.4	613	<u>22.4</u>	<u>613</u>	22.2	619	22.4	613
481.wrf	109	103	108	104	<u>108</u>	<u>103</u>	109	103	108	104	<u>108</u>	<u>103</u>
482.sphinx3	222	87.6	223	87.5	<u>223</u>	<u>87.5</u>	222	87.8	<u>221</u>	<u>88.1</u>	221	88.3

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
 QPI snoop mode: Home Snoop
 COD Enable = Disabled, Early Snoop = Disabled
 CPU C1E Support = Disabled
 QPI Link Frequency Select = 6.4 GT/s



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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 = "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:

-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

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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Peak Optimization Flags (Continued)

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

447.dealII: 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: -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 -opt-prefetch -parallel

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/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html>

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



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

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml>

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

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For other inquiries, please contact webmaster@spec.org.

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