



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = **63.5**

PRIMERGY RX500 S7, Intel Xeon E5-4620, 2.20 GHz

SPECfp_base2006 = **60.4**

CPU2006 license: 19

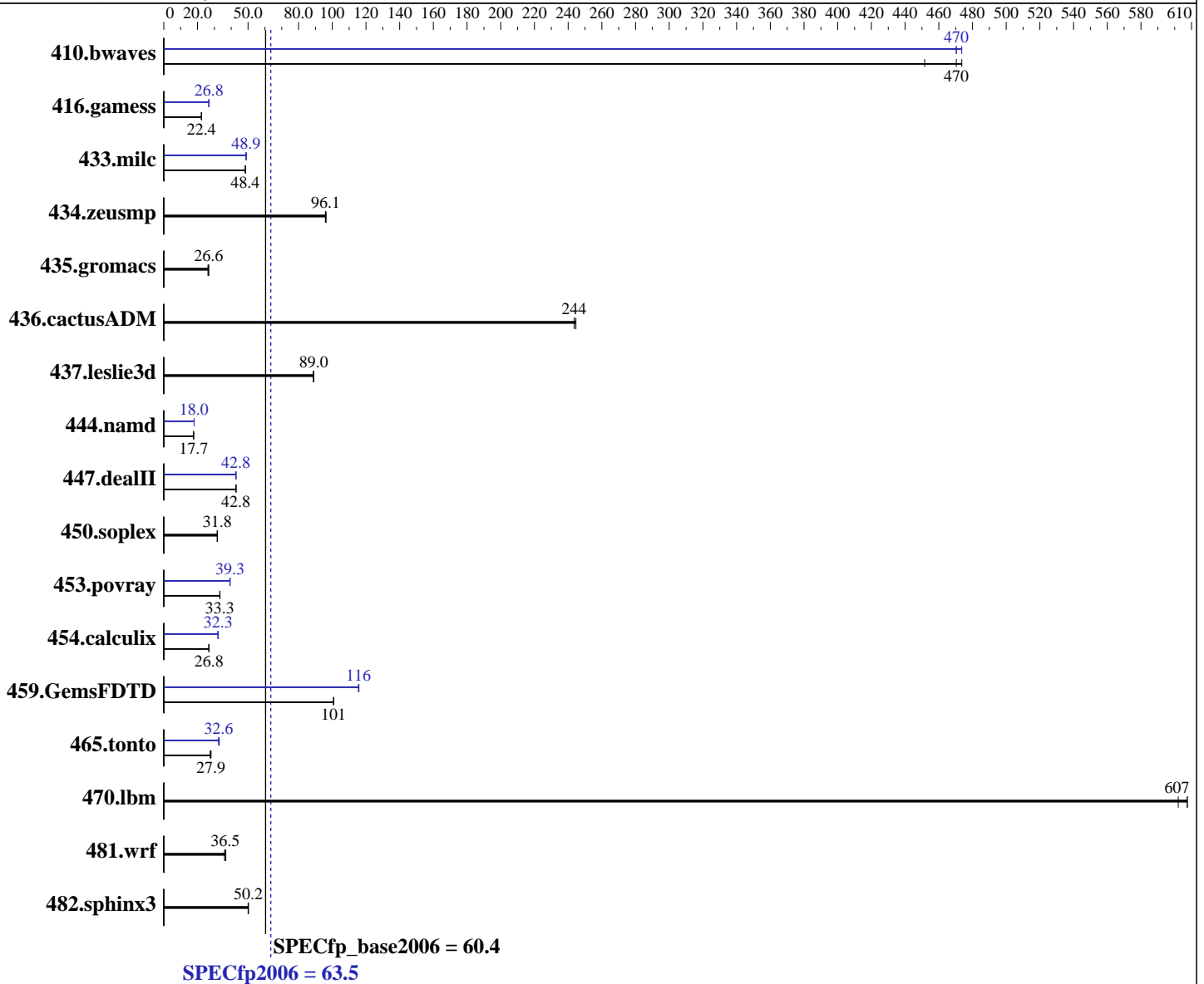
Test date: Jul-2012

Test sponsor: Fujitsu

Hardware Availability: Jul-2012

Tested by: Fujitsu

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-4620
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip
 CPU(s) orderable: 2,4 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 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 16 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (32 x 8 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	30.1	452	<u>28.9</u>	<u>470</u>	28.7	474	28.9	470	28.7	474	<u>28.9</u>	<u>470</u>
416.gamess	872	22.4	<u>875</u>	<u>22.4</u>	880	22.2	730	26.8	<u>731</u>	<u>26.8</u>	733	26.7
433.milc	190	48.4	190	48.4	<u>190</u>	<u>48.4</u>	<u>188</u>	<u>48.9</u>	188	48.9	188	48.8
434.zeusmp	94.9	95.9	<u>94.7</u>	<u>96.1</u>	94.5	96.3	94.9	95.9	<u>94.7</u>	<u>96.1</u>	94.5	96.3
435.gromacs	268	26.6	<u>268</u>	<u>26.6</u>	273	26.2	268	26.6	<u>268</u>	<u>26.6</u>	273	26.2
436.cactusADM	<u>49.1</u>	<u>244</u>	48.9	245	49.1	244	<u>49.1</u>	<u>244</u>	48.9	245	49.1	244
437.leslie3d	106	88.8	<u>106</u>	<u>89.0</u>	106	89.0	106	88.8	<u>106</u>	<u>89.0</u>	106	89.0
444.namd	454	17.7	<u>453</u>	<u>17.7</u>	453	17.7	445	18.0	<u>445</u>	<u>18.0</u>	445	18.0
447.dealII	267	42.8	267	42.9	<u>267</u>	<u>42.8</u>	268	42.8	267	42.9	<u>267</u>	<u>42.8</u>
450.soplex	<u>263</u>	<u>31.8</u>	263	31.7	263	31.8	<u>263</u>	<u>31.8</u>	263	31.7	263	31.8
453.povray	<u>160</u>	<u>33.3</u>	160	33.2	159	33.4	<u>135</u>	<u>39.3</u>	136	39.2	135	39.3
454.calculix	<u>308</u>	<u>26.8</u>	307	26.9	309	26.7	256	32.3	257	32.1	<u>256</u>	<u>32.3</u>
459.GemsFDTD	<u>105</u>	<u>101</u>	105	101	105	101	91.8	116	91.6	116	<u>91.8</u>	<u>116</u>
465.tonto	<u>352</u>	<u>27.9</u>	351	28.0	357	27.5	<u>301</u>	<u>32.6</u>	299	33.0	303	32.5
470.lbm	<u>22.6</u>	<u>607</u>	22.6	607	22.8	602	<u>22.6</u>	<u>607</u>	22.6	607	22.8	602
481.wrf	310	36.0	304	36.8	<u>306</u>	<u>36.5</u>	310	36.0	304	36.8	<u>306</u>	<u>36.5</u>
482.sphinx3	388	50.2	390	50.0	<u>389</u>	<u>50.2</u>	388	50.2	390	50.0	<u>389</u>	<u>50.2</u>

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"
 Transparent Huge Pages disabled with:
 echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Platform Notes

BIOS configuration:
 Intel HT Technology = Disable
 Frequency Floor Override = Enable



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General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "32"

Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB memory using RHEL6.2
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 -static -parallel -opt-prefetch
-ansi-alias`

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -static -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) -static -auto-ilp32
-ansi-alias`

`470.lbm: basepeak = yes`

`482.sphinx3: basepeak = yes`

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Peak Optimization Flags (Continued)

C++ benchmarks:

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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-ansi-alias
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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static
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- -static
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -xSSE4.2(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-ic12.1-official-linux64.20111122.html>
<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml>

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

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