



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]_rate2006 = 417

PRIMERGY BX920 S3, Intel Xeon E5-2470, 2.30 GHz

SPECfp_rate_base2006 = 405

CPU2006 license: 19

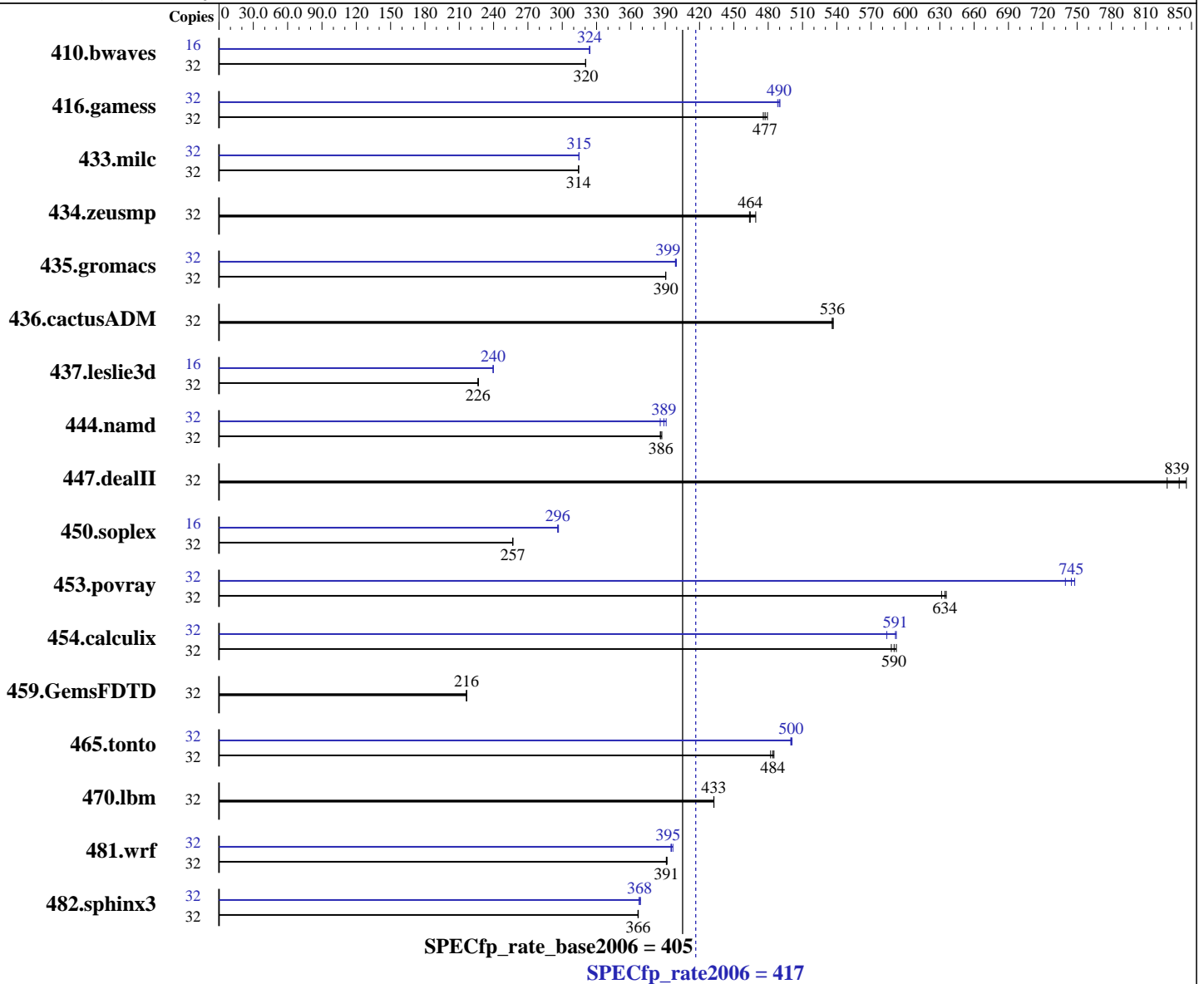
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Aug-2012

Hardware Availability: May-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E5-2470
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
 CPU MHz: 2300
 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 6.2 (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: No
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 96 GB (12 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: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	<u>1357</u>	<u>320</u>	1357	321	1357	320	16	671	324	<u>671</u>	<u>324</u>	671	324
416.gamess	32	1307	479	<u>1313</u>	<u>477</u>	1317	476	32	1283	488	<u>1280</u>	<u>490</u>	1278	490
433.milc	32	935	314	935	314	<u>935</u>	<u>314</u>	32	933	315	<u>934</u>	<u>315</u>	934	315
434.zeusmp	32	621	469	628	464	<u>627</u>	<u>464</u>	32	621	469	628	464	<u>627</u>	<u>464</u>
435.gromacs	32	<u>585</u>	<u>390</u>	585	390	585	391	32	571	400	573	399	<u>573</u>	<u>399</u>
436.cactusADM	32	712	537	713	536	<u>713</u>	<u>536</u>	32	712	537	713	536	<u>713</u>	<u>536</u>
437.leslie3d	32	1326	227	<u>1328</u>	<u>226</u>	1329	226	16	<u>628</u>	<u>240</u>	627	240	628	240
444.namd	32	663	387	<u>665</u>	<u>386</u>	665	386	32	665	386	<u>660</u>	<u>389</u>	657	391
447.dealII	32	433	846	<u>436</u>	<u>839</u>	442	829	32	433	846	<u>436</u>	<u>839</u>	442	829
450.soplex	32	1039	257	<u>1039</u>	<u>257</u>	1040	257	16	451	296	450	297	<u>451</u>	<u>296</u>
453.povray	32	<u>268</u>	<u>634</u>	268	636	270	632	32	<u>229</u>	<u>745</u>	230	740	228	748
454.calculix	32	<u>447</u>	<u>590</u>	446	592	449	588	32	<u>447</u>	<u>591</u>	452	584	446	592
459.GemsFDTD	32	<u>1569</u>	<u>216</u>	1569	216	1569	216	32	<u>1569</u>	<u>216</u>	1569	216	1569	216
465.tonto	32	<u>651</u>	<u>484</u>	649	485	653	482	32	630	500	629	501	<u>630</u>	<u>500</u>
470.lbm	32	1017	433	1016	433	<u>1016</u>	<u>433</u>	32	1017	433	1016	433	<u>1016</u>	<u>433</u>
481.wrf	32	<u>914</u>	<u>391</u>	914	391	913	392	32	901	397	905	395	<u>904</u>	<u>395</u>
482.sphinx3	32	1704	366	1702	367	<u>1702</u>	<u>366</u>	32	1699	367	<u>1697</u>	<u>368</u>	1693	368

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

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:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

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General Notes (Continued)

Binaries compiled on a system with 2x E5-2650 CPU + 96 GB memory using RHEL6.2
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

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

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
-opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

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: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-p32 -ansi-alias -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

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>

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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