



SPEC® CFP2006 Result

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ACTION S.A.

ACTINA SOLAR 820 X5 (Intel Xeon E5-2630 v2, 2.60 GHz)

SPECfp®_rate2006 = 430

SPECfp_rate_base2006 = 424

CPU2006 license: 9008

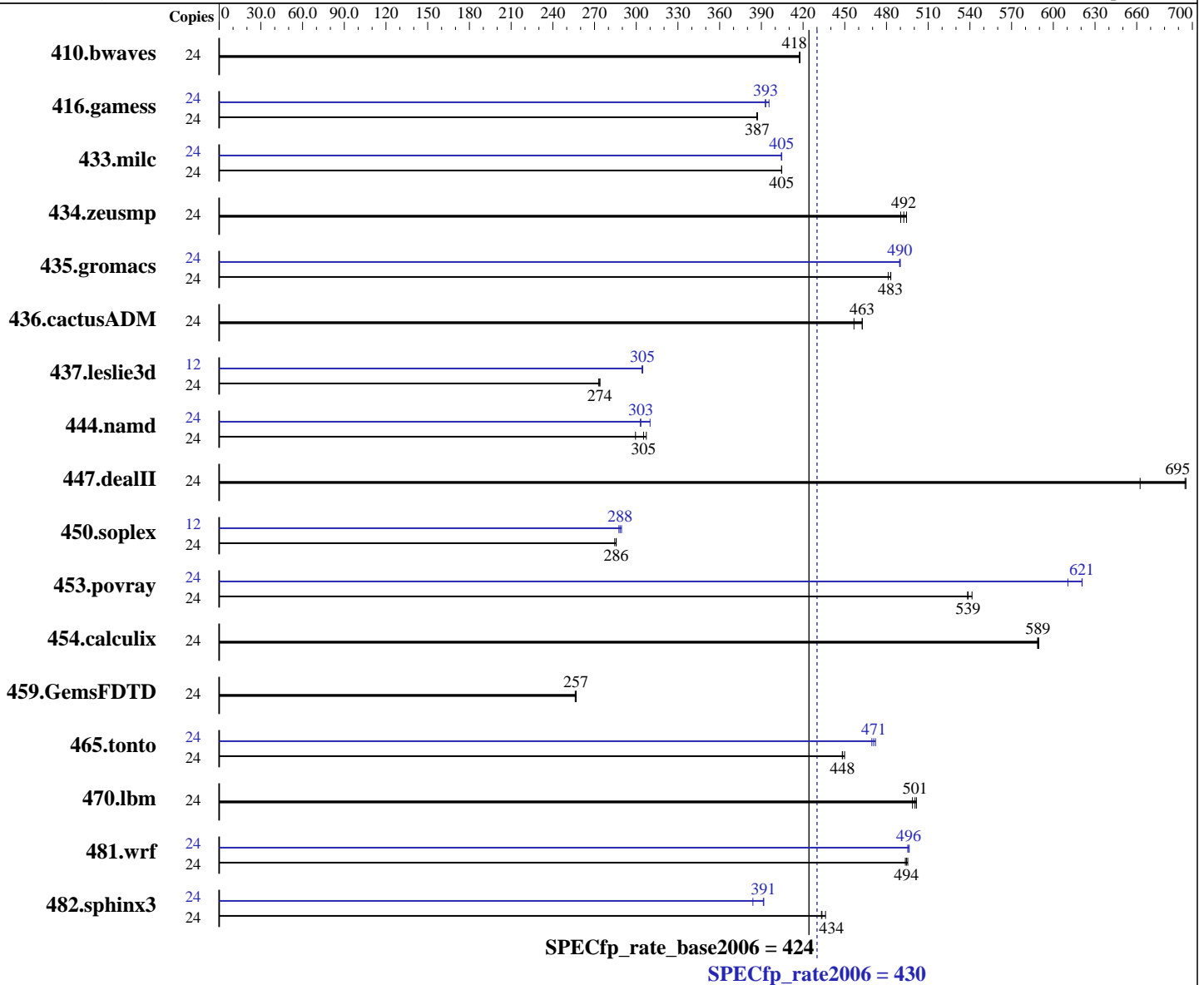
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: Jan-2005

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2630 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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

Continued on next page

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: No
 File System: ext4

Continued on next page



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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz and CL11)
Disk Subsystem: 1 x 240 GB SATA II SSD
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	24	782	417	781	418	781	418	24	782	417	781	418	781	418		
416.gamess	24	1215	387	1214	387	1214	387	24	1195	393	1188	396	1196	393		
433.milc	24	544	405	545	405	544	405	24	544	405	545	404	544	405		
434.zeusmp	24	444	492	445	490	442	494	24	444	492	445	490	442	494		
435.gromacs	24	355	483	356	481	355	483	24	350	489	350	490	350	490		
436.cactusADM	24	620	463	620	463	628	457	24	620	463	620	463	628	457		
437.leslie3d	24	824	274	827	273	824	274	12	371	304	370	305	370	305		
444.namd	24	626	307	643	299	630	305	24	621	310	635	303	635	303		
447.dealII	24	395	695	414	662	395	695	24	395	695	414	662	395	695		
450.soplex	24	701	286	701	286	704	285	12	346	289	348	288	347	288		
453.povray	24	237	538	237	539	236	542	24	209	610	206	621	206	621		
454.calculix	24	336	589	336	590	336	589	24	336	589	336	590	336	589		
459.GemsFDTD	24	994	256	992	257	993	257	24	994	256	992	257	993	257		
465.tonto	24	527	448	525	450	527	448	24	500	472	502	471	503	469		
470.lbm	24	657	502	661	499	659	501	24	657	502	661	499	659	501		
481.wrf	24	541	495	542	494	543	494	24	541	495	540	496	541	496		
482.sphinx3	24	1079	434	1072	436	1080	433	24	1194	392	1195	391	1218	384		

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"



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Platform Notes

Bios Settings:

System Acoustic and Performance Configuration = Custom

Select Memory RAS Configuration = Maximum Performance

Intel(R) Turbo Boost Technology = Enabled

Processor C3 = Disabled

Processor C6 = Disabled

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191

running on localhost.localdomain Tue Jan 4 19:58:11 2005

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2630 v2 @ 2.60GHz

2 "physical id"s (chips)

24 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 6

siblings : 12

physical 0: cores 0 1 2 3 4 5

physical 1: cores 0 1 2 3 4 5

cache size : 15360 KB

From /proc/meminfo

MemTotal: 132053004 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*

redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:

Linux localhost.localdomain 2.6.32-358.11.1.el6.x86_64 #1 SMP Tue Nov 19

17:43:04 CET 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 1 21:59

SPEC is set to: /cpu2006.1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdal ext4 193G 68G 115G 37% /

Additional information from dmidecode:

Continued on next page

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Platform Notes (Continued)

BIOS Intel Corp. SE5C600.86B.02.02.0002.122320131210 12/23/2013

Memory:

16x 8 GB

16x Hynix HMT31GR7EFR4C-RD 8 GB 1867 MHz 2 rank

(End of data from sysinfo program)

dmidecode does not properly detect memory modules

16 modules of 8 GB were used to run the test (128 GB total)

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64:/cpu2006.1.2/sh"

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop_caches

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

Binaries compiled on a system with 2x Xeon E5-2650 v2 chips

+ 256 GB memory using RedHat EL 6.4

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

Continued on next page

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Page 4



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Base Portability Flags (Continued)

```

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 -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

```

C++ benchmarks:

```

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

```

Fortran benchmarks:

```

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

```

Benchmarks using both Fortran and C:

```

-xAVX -ipo -O3 -no-prec-div -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

```



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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
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) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -auto-ilp32

```

```

470.lbm: basepeak = yes

```

```

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
            -unroll2

```

C++ benchmarks:

```

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -fno-alias -auto-ilp32

```

```

447.dealII: basepeak = yes

```

```

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
         -no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -unroll4 -ansi-alias

```

Fortran benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

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: -xAVX -ipo -O3 -no-prec-div -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

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Intel-Platform.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/ACTION.SA-Platform-Flags-RevB-apr-2014-For-Intel-Platform.xml>

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