



SPEC[®] CFP2006 Result

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Huawei

SPECfp[®]2006 = 88.9

Huawei RH2285 V3 (Intel Xeon E5-2640 v3)

SPECfp_base2006 = 82.6

CPU2006 license: 3175

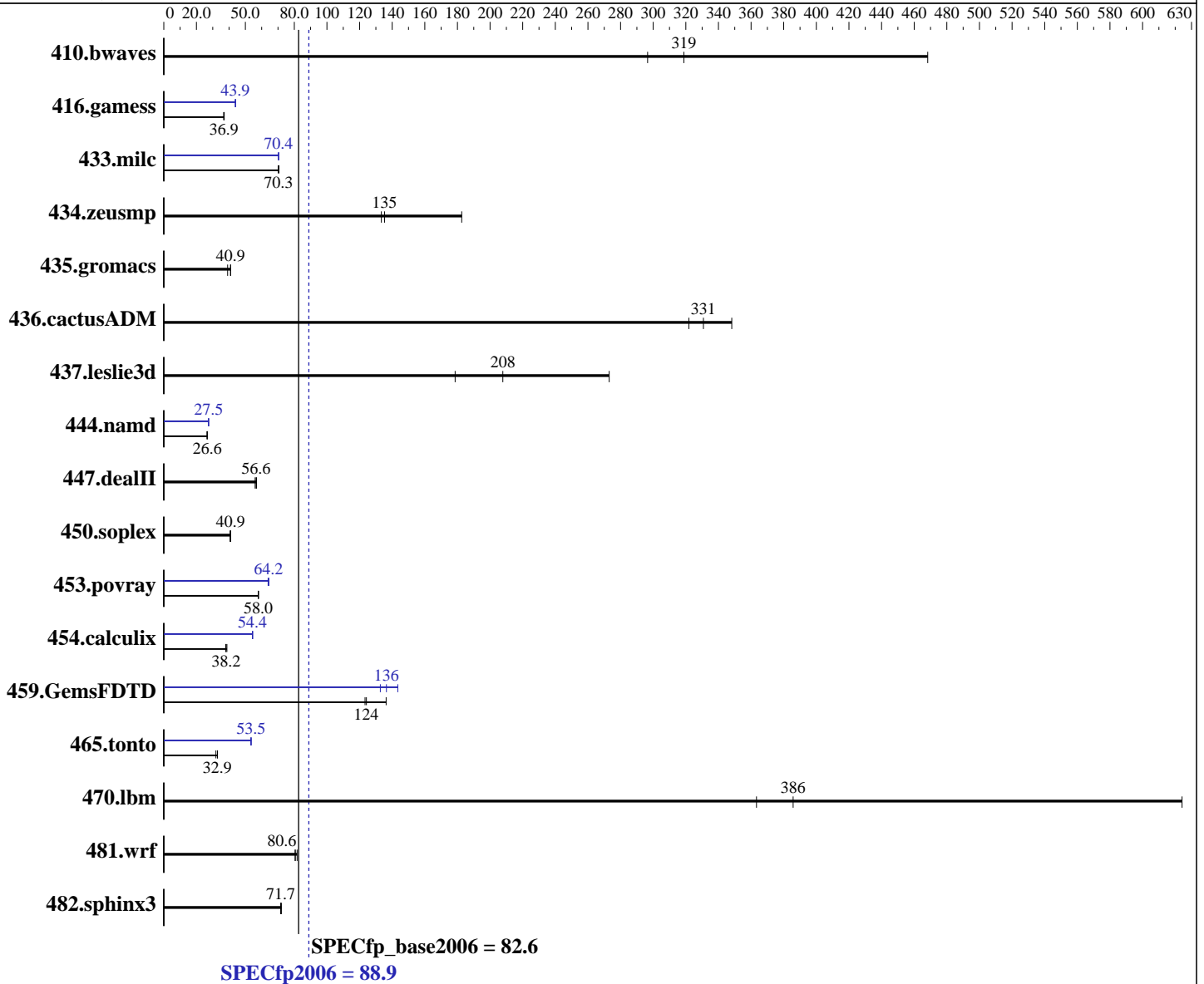
Test date: Feb-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E5-2640 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
 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: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 2.6.32-431.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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1867 MHz)
 Disk Subsystem: 1 x 500 GB SATA, 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	29.0	468	45.8	297	42.6	319	29.0	468	45.8	297	42.6	319
416.gamess	529	37.0	531	36.9	533	36.7	445	44.0	446	43.9	446	43.9
433.milc	130	70.6	131	70.2	131	70.3	130	70.4	131	70.3	130	70.4
434.zeusmp	49.8	183	67.2	135	68.2	133	49.8	183	67.2	135	68.2	133
435.gromacs	175	40.9	183	39.1	174	41.0	175	40.9	183	39.1	174	41.0
436.cactusADM	34.3	348	37.1	322	36.1	331	34.3	348	37.1	322	36.1	331
437.leslie3d	34.4	273	45.2	208	52.6	179	34.4	273	45.2	208	52.6	179
444.namd	302	26.6	302	26.6	302	26.6	292	27.5	292	27.5	292	27.5
447.dealII	202	56.6	201	56.8	204	56.0	202	56.6	201	56.8	204	56.0
450.soplex	205	40.6	204	41.0	204	40.9	205	40.6	204	41.0	204	40.9
453.povray	91.8	58.0	91.8	57.9	91.7	58.0	82.6	64.4	82.8	64.2	83.2	63.9
454.calculix	217	37.9	213	38.7	216	38.2	152	54.4	152	54.4	152	54.4
459.GemsFDTD	77.8	136	85.4	124	86.0	123	77.8	136	79.9	133	74.0	143
465.tonto	308	32.0	299	32.9	299	32.9	184	53.4	184	53.5	184	53.6
470.lbm	35.6	386	37.8	363	22.0	624	35.6	386	37.8	363	22.0	624
481.wrf	137	81.7	139	80.6	139	80.6	137	81.7	139	80.6	139	80.6
482.sphinx3	272	71.7	270	72.1	272	71.7	272	71.7	270	72.1	272	71.7

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:
 Set Power Efficiency Mode to Custom
 Set Snoop Mode to HS
 Set Hyper-Threading to Disabled
 Baseboard Management Controller used to adjust the fan speed to 100%
 Sysinfo program /spec/config/sysinfo.rev6818
 \$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
 running on localhost Thu Feb 6 06:20:35 2014

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Platform Notes (Continued)

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 E5-2640 v3 @ 2.60GHz
 2 "physical id"s (chips)
 16 "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    : 8
  siblings     : 8
  physical 0   : cores 0 1 2 3 4 5 6 7
  physical 1   : cores 0 1 2 3 4 5 6 7
cache size     : 20480 KB

```

```

From /proc/meminfo
MemTotal:      264277308 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux localhost 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Feb 5 13:41

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  433G  108G  303G  27% /

```

```

Additional information from dmidecode:
BIOS Insyde Corp. 1.16 09/02/2014
Memory:
 8x Samsung M393A2G40DB0-CPB 16 GB 1867 MHz 1 rank
 8x Samsung M393A2G40DB0-CPB 16 GB 1867 MHz 2 rank

```

(End of data from sysinfo program)



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General Notes

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

LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

OMP_NUM_THREADS = "16"

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>

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: basepeak = yes

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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.dealIII: 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/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.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-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.xml>

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Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 18 16:31:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 November 2014.