



SPEC[®] CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp[®]_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

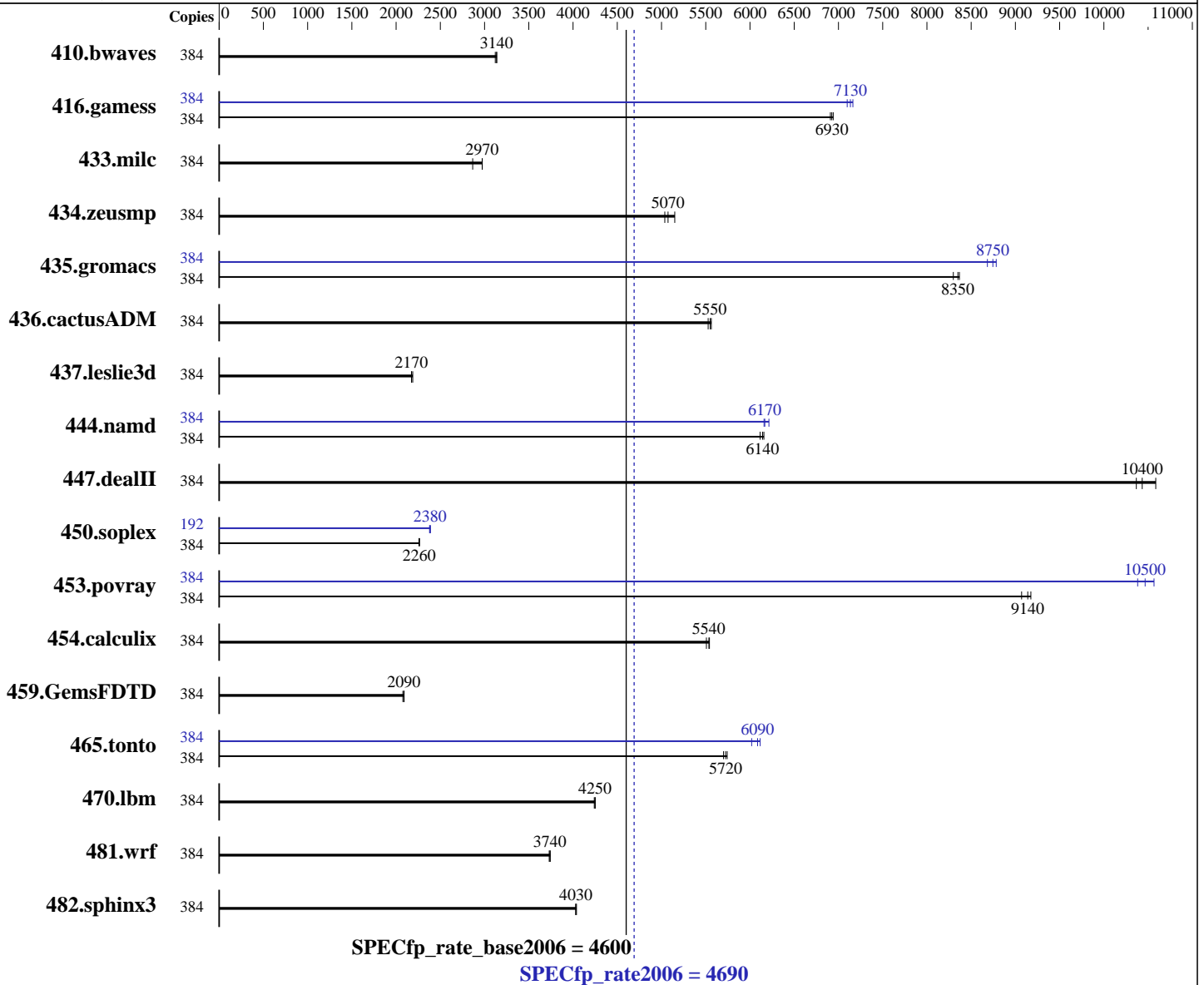
Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015



Hardware

CPU Name: Intel Xeon E7-8894 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 192 cores, 8 chips, 24 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4,6,8 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: SUSE Linux Enterprise Server 12 (x86_64) SP1
 Kernel 3.12.49-11-default
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: xfs
 System State: Run level 5 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

L3 Cache: 60 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx8 PC4-2400T-R, running at 1600 MHz)
 Disk Subsystem: 2 x 600 GB SAS, 10K RPM
 Other Hardware: None

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	384	1672	3120	1663	3140	1665	3140	384	1672	3120	1663	3140	1665	3140
416.gamess	384	1083	6940	1086	6930	1088	6910	384	1050	7160	1059	7100	1054	7130
433.milc	384	1230	2870	1185	2970	1186	2970	384	1230	2870	1185	2970	1186	2970
434.zeusmp	384	689	5070	694	5040	679	5150	384	689	5070	694	5040	679	5150
435.gromacs	384	328	8370	330	8300	328	8350	384	316	8680	312	8780	314	8750
436.cactusADM	384	827	5550	825	5560	830	5530	384	827	5550	825	5560	830	5530
437.leslie3d	384	1660	2170	1660	2170	1650	2190	384	1660	2170	1660	2170	1650	2190
444.namd	384	500	6160	501	6140	504	6110	384	496	6210	500	6160	499	6170
447.dealII	384	421	10400	424	10400	415	10600	384	421	10400	424	10400	415	10600
450.soplex	384	1414	2260	1415	2260	1418	2260	192	670	2390	673	2380	672	2380
453.povray	384	225	9070	223	9170	224	9140	384	195	10500	197	10400	193	10600
454.calculix	384	575	5510	572	5540	572	5540	384	575	5510	572	5540	572	5540
459.GemsFDTD	384	1962	2080	1949	2090	1951	2090	384	1962	2080	1949	2090	1951	2090
465.tonto	384	658	5740	663	5700	660	5720	384	628	6020	621	6090	618	6120
470.lbm	384	1242	4250	1244	4240	1241	4250	384	1242	4250	1244	4240	1241	4250
481.wrf	384	1147	3740	1150	3730	1146	3740	384	1147	3740	1150	3730	1146	3740
482.sphinx3	384	1853	4040	1856	4030	1857	4030	384	1853	4040	1856	4030	1857	4030

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"
Turbo mode set with:
cpupower -c all frequency-set -g performance



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

Platform Notes

BIOS configuration:

Set Power Efficiency Mode to Performance

Set Lock_step to disabled

Baseboard Management Controller used to adjust the fan speed to 100%

Set C-State to C0/C1

Sysinfo program /home/spec/config/sysinfo.rev6914

\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1

running on linux-sr55 Sun Jan 22 15:21:08 2017

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 E7-8894 v4 @ 2.40GHz

8 "physical id"s (chips)

384 "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 : 24

siblings : 48

physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

cache size : 61440 KB

From /proc/meminfo

MemTotal: 1058806180 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

SUSE Linux Enterprise Server 12 SP1

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

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

Platform Notes (Continued)

```

PATCHLEVEL = 1
# This file is deprecated and will be removed in a future service pack or
# release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
Linux linux-sr55 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 5 Jan 22 01:38

SPEC is set to: /home/spec
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       xfs       1.6T      333G  1.3T   21% /home
Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
reads system data which is "intended to allow hardware to be accurately
determined", but the intent may not be met, as there are frequent changes to
hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. BLISY102 11/07/2016
Memory:
 64x Micron 18ASF2G72PDZ-2G3B1 16 GB 2 rank 2400 MHz, configured at 1600 MHz
128x NO DIMM NO DIMM

(End of data from sysinfo program)

```

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/spec/libs/32:/home/spec/libs/64:/home/spec/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/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>



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Jan-2017
Hardware Availability: Feb-2017
Software Availability: Dec-2015

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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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
450.soplex: -D_FILE_OFFSET_BITS=64
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

Peak Optimization Flags

C benchmarks:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

Peak Optimization Flags (Continued)

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 4690

Huawei RH8100 V3 (Intel Xeon E7-8894 v4)

SPECfp_rate_base2006 = 4600

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Jan-2017

Hardware Availability: Feb-2017

Software Availability: Dec-2015

Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.2-BDW-RevG.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.2-BDW-RevG.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

Report generated on Tue Feb 7 17:00:50 2017 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 7 February 2017.