



SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp®_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

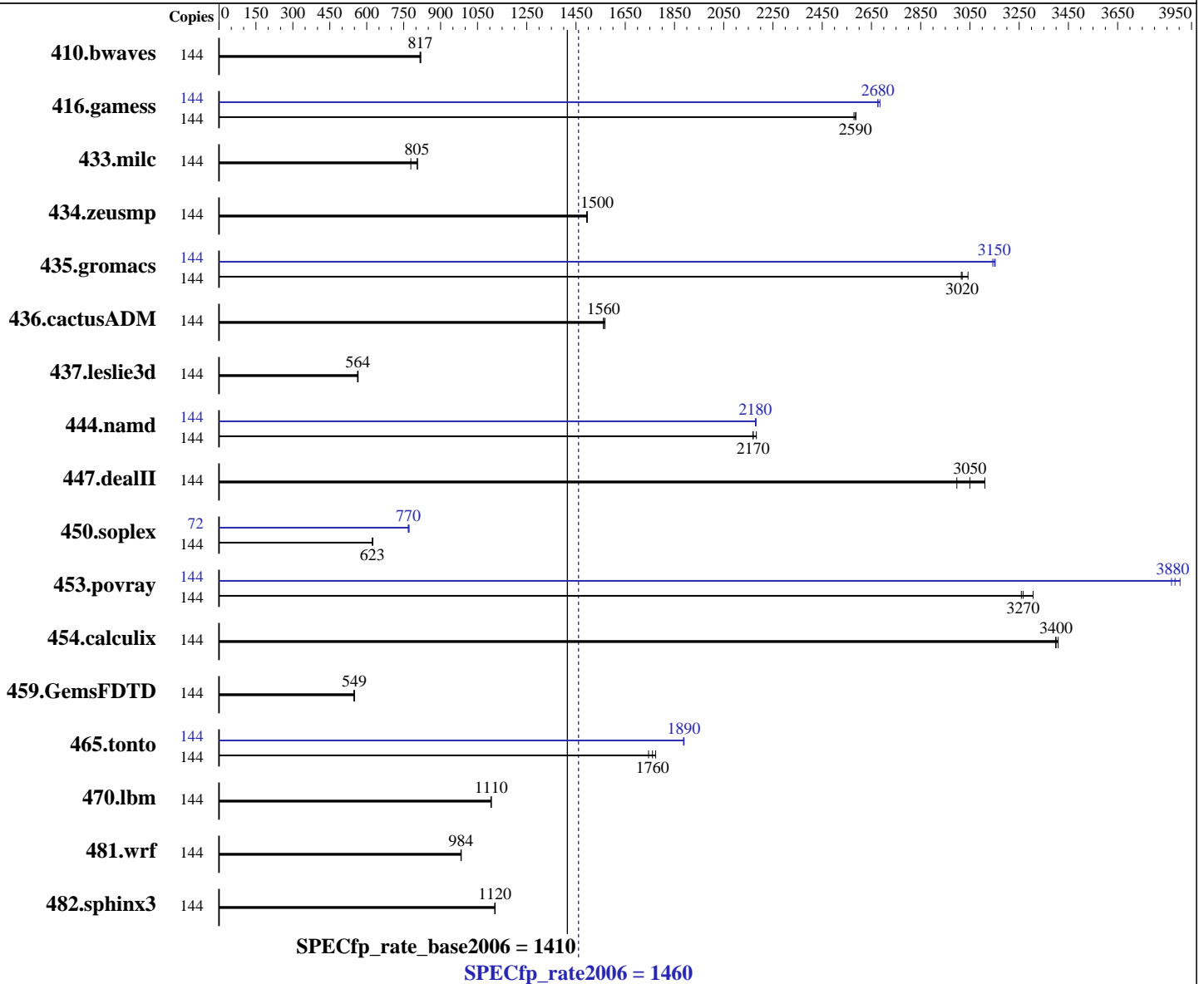
Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Dec-2015



Hardware

CPU Name: Intel Xeon E7-8860 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 72 cores, 4 chips, 18 cores/chip, 2 threads/core
 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

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 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Dec-2015

L3 Cache: 45 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 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	144	2387	820	2396	817	<u>2394</u>	<u>817</u>	144	2387	820	2396	817	<u>2394</u>	<u>817</u>
416.gamess	144	1093	2580	1090	2590	<u>1091</u>	<u>2590</u>	144	<u>1053</u>	<u>2680</u>	1054	2680	1050	2680
433.milc	144	1697	779	1639	807	<u>1643</u>	<u>805</u>	144	1697	779	1639	807	<u>1643</u>	<u>805</u>
434.zeusmp	144	876	1500	<u>876</u>	<u>1500</u>	877	1490	144	876	1500	<u>876</u>	<u>1500</u>	877	1490
435.gromacs	144	<u>341</u>	<u>3020</u>	341	3010	338	3040	144	326	3150	<u>326</u>	<u>3150</u>	327	3140
436.cactusADM	144	1098	1570	1102	1560	<u>1102</u>	<u>1560</u>	144	1098	1570	1102	1560	<u>1102</u>	<u>1560</u>
437.leslie3d	144	2405	563	2395	565	<u>2399</u>	<u>564</u>	144	2405	563	2395	565	<u>2399</u>	<u>564</u>
444.namd	144	529	2180	533	2170	<u>532</u>	<u>2170</u>	144	530	2180	<u>530</u>	<u>2180</u>	529	2180
447.dealII	144	530	3110	550	3000	<u>540</u>	<u>3050</u>	144	530	3110	550	3000	<u>540</u>	<u>3050</u>
450.soplex	144	<u>1927</u>	<u>623</u>	1928	623	1922	625	72	781	769	<u>780</u>	<u>770</u>	777	772
453.povray	144	<u>235</u>	<u>3270</u>	232	3310	235	3260	144	198	3870	<u>197</u>	<u>3880</u>	196	3900
454.calculix	144	349	3410	<u>349</u>	<u>3400</u>	350	3400	144	349	3410	<u>349</u>	<u>3400</u>	350	3400
459.GemsFDTD	144	2788	548	2778	550	<u>2780</u>	<u>549</u>	144	2788	548	2778	550	<u>2780</u>	<u>549</u>
465.tonto	144	799	1770	812	1740	<u>805</u>	<u>1760</u>	144	<u>751</u>	<u>1890</u>	750	1890	751	1890
470.lbm	144	1789	1110	<u>1789</u>	<u>1110</u>	1792	1100	144	1789	1110	<u>1789</u>	<u>1110</u>	1792	1100
481.wrf	144	<u>1635</u>	<u>984</u>	1635	984	1637	983	144	<u>1635</u>	<u>984</u>	1635	984	1637	983
482.sphinx3	144	2505	1120	2502	1120	<u>2505</u>	<u>1120</u>	144	2505	1120	2502	1120	<u>2505</u>	<u>1120</u>

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 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

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/speccpu/config/sysinfo.rev6914

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

running on linux-udes Tue Dec 20 10:07:43 2016

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 E7-8860 v4 @ 2.20GHz

4 "physical id"s (chips)

144 "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 : 18

siblings : 36

physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

cache size : 46080 KB

From /proc/meminfo

MemTotal: 264351052 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

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"

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

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

Test date: Dec-2016
Hardware Availability: Jun-2016
Software Availability: Dec-2015

Platform Notes (Continued)

```
uname -a:
Linux linux-udes 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 Dec 20 09:46
```

```
SPEC is set to: /home/speccpu
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda1       xfs   507G  8.0G  499G   2% /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:

16x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1600 MHz
32x 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/speccpu/libs/32:/home/speccpu/libs/64:/home/speccpu/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>
```

Base Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks:

```
icpc -m64
```

Fortran benchmarks:

```
ifort -m64
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Dec-2015

Base Compiler Invocation (Continued)

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

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Dec-2015

Peak Compiler Invocation (Continued)

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.deall: -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:

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Dec-2015

Peak Optimization Flags (Continued)

447.dealII: 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

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1460

Huawei RH5885 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 1410

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Dec-2015

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 Wed Jan 11 10:34:52 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 10 January 2017.