



SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp®_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

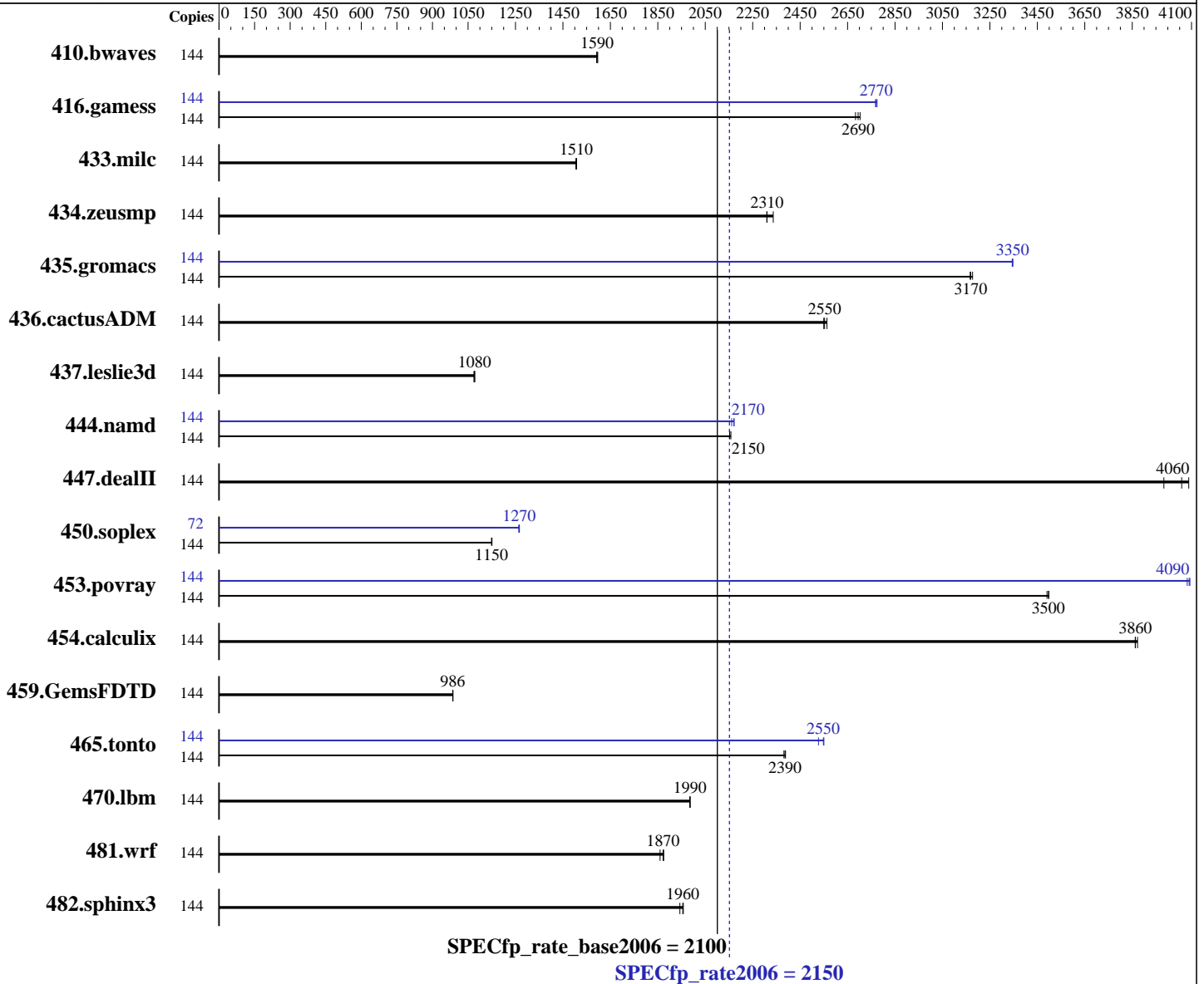
Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Nov-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: Red Hat Enterprise Linux Server release 7.2 (Maipo)
 3.10.0-327.el7.x86_64
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux
 Auto Parallel: No
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Nov-2015

L3 Cache: 45 MB I+D on chip per chip
 Other Cache: None
 Memory: 512 GB (32 x 16 GB 2Rx8 PC4-2400T-R, running at 1600 MHz)
 Disk Subsystem: 1 x 480 GB SSD
 Other Hardware: None

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	1226	1600	1229	1590	1228	1590	144	1226	1600	1229	1590	1228	1590
416.gamess	144	1051	2680	1046	2690	1043	2700	144	1019	2770	1016	2770	1018	2770
433.milc	144	877	1510	877	1510	879	1500	144	877	1510	877	1510	879	1500
434.zeusmp	144	567	2310	561	2340	567	2310	144	567	2310	561	2340	567	2310
435.gromacs	144	324	3180	324	3170	325	3170	144	307	3350	307	3350	307	3340
436.cactusADM	144	674	2550	671	2560	675	2550	144	674	2550	671	2560	675	2550
437.leslie3d	144	1260	1070	1256	1080	1255	1080	144	1260	1070	1256	1080	1255	1080
444.namd	144	535	2160	536	2150	536	2150	144	532	2170	532	2170	534	2160
447.dealII	144	406	4060	403	4090	414	3980	144	406	4060	403	4090	414	3980
450.soplex	144	1044	1150	1045	1150	1045	1150	72	474	1270	474	1270	475	1260
453.povray	144	219	3490	219	3500	219	3500	144	187	4090	187	4090	188	4080
454.calculix	144	307	3860	307	3870	308	3860	144	307	3860	307	3870	308	3860
459.GemsFDTD	144	1550	986	1550	986	1549	986	144	1550	986	1550	986	1549	986
465.tonto	144	593	2390	594	2390	595	2380	144	561	2530	556	2550	556	2550
470.lbm	144	996	1990	997	1980	996	1990	144	996	1990	997	1980	996	1990
481.wrf	144	858	1870	865	1860	859	1870	144	858	1870	865	1860	859	1870
482.sphinx3	144	1435	1960	1444	1940	1434	1960	144	1435	1960	1444	1940	1434	1960

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"



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Nov-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

Set COD Mode to enabled

Sysinfo program /spec16/config/sysinfo.rev6914

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

running on localhost.localdomain Fri Dec 2 06:00:36 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 : 23040 KB

From /proc/meminfo

MemTotal: 528065200 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

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

os-release:

NAME="Red Hat Enterprise Linux Server"

VERSION="7.2 (Maipo)"

ID="rhel"

ID_LIKE="fedora"

VERSION_ID="7.2"

PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"

ANSI_COLOR="0;31"

CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"

redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:ga:server

uname -a:

Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Nov-2015

Platform Notes (Continued)

run-level 3 Dec 2 05:56

SPEC is set to: /spec16

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sdal	ext4	407G	18G	368G	5%	/

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. BLISV788 11/07/2016

Memory:

32x Hynix HMA82GR7AFR8N-UH 16 GB 2 rank 2400 MHz, configured at 1600 MHz

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/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

Benchmarks using both Fortran and C:

icc -m64 ifort -m64



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Nov-2015

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

```

C++ benchmarks (except as noted below):

```

icpc -m64

```

```

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

```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test date: Dec-2016

Test sponsor: Huawei

Hardware Availability: Jun-2016

Tested by: Huawei

Software Availability: Nov-2015

Peak Compiler Invocation (Continued)

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:

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.dealII: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Nov-2015

Peak Optimization Flags (Continued)

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

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-BDW-V1.0.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-BDW-V1.0.xml>



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 2150

Huawei CH242 V3 (Intel Xeon E7-8860 v4)

SPECfp_rate_base2006 = 2100

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2016

Hardware Availability: Jun-2016

Software Availability: Nov-2015

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 Dec 28 10:52:30 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 December 2016.