





# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Huawei

SPECfp2006 = **107**

## Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = **101**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

L3 Cache: 40 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R)  
Disk Subsystem: 1 x 800 GB SATA SSD  
Other Hardware: None

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	<u>25.7</u>	<u>530</u>	24.4	556	27.3	498	<u>25.7</u>	<u>530</u>	24.4	556	27.3	498
416.gamess	<u>583</u>	<u>33.6</u>	583	33.6	585	33.5	491	39.9	<u>491</u>	<u>39.8</u>	492	39.8
433.milc	144	63.7	146	62.8	<u>144</u>	<u>63.6</u>	144	63.7	146	62.8	<u>144</u>	<u>63.6</u>
434.zeusmp	47.2	193	<u>47.1</u>	<u>193</u>	46.9	194	47.2	193	<u>47.1</u>	<u>193</u>	46.9	194
435.gromacs	<u>169</u>	<u>42.2</u>	171	41.8	168	42.6	<u>169</u>	<u>42.2</u>	171	41.8	168	42.6
436.cactusADM	<u>16.9</u>	<u>707</u>	16.6	720	17.3	689	<u>16.9</u>	<u>707</u>	16.6	720	17.3	689
437.leslie3d	<u>25.1</u>	<u>374</u>	25.1	374	25.0	376	<u>25.1</u>	<u>374</u>	25.1	374	25.0	376
444.namd	304	26.4	<u>304</u>	<u>26.4</u>	305	26.3	296	27.1	<u>295</u>	<u>27.2</u>	295	27.2
447.dealII	<u>203</u>	<u>56.2</u>	204	56.2	201	56.8	<u>203</u>	<u>56.2</u>	204	56.2	201	56.8
450.soplex	196	42.5	<u>197</u>	<u>42.3</u>	197	42.2	196	42.5	<u>197</u>	<u>42.3</u>	197	42.2
453.povray	98.6	53.9	<u>101</u>	<u>52.7</u>	101	52.5	87.5	60.8	88.6	60.0	<u>88.5</u>	<u>60.1</u>
454.calculix	<u>171</u>	<u>48.2</u>	171	48.2	172	47.8	155	53.1	<u>156</u>	<u>53.0</u>	156	52.9
459.GemsFDTD	49.4	215	47.9	221	<u>48.2</u>	<u>220</u>	40.9	259	<u>40.1</u>	<u>265</u>	40.0	265
465.tonto	256	38.5	265	37.2	<u>256</u>	<u>38.4</u>	195	50.5	197	49.8	<u>195</u>	<u>50.3</u>
470.lbm	20.7	664	20.0	686	<u>20.2</u>	<u>681</u>	20.7	664	20.0	686	<u>20.2</u>	<u>681</u>
481.wrf	<u>140</u>	<u>79.7</u>	140	79.8	142	78.8	<u>140</u>	<u>79.7</u>	140	79.8	142	78.8
482.sphinx3	289	67.4	286	68.0	<u>288</u>	<u>67.7</u>	289	67.4	286	68.0	<u>288</u>	<u>67.7</u>

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 mode  
Set Patrol Scrub to Disable  
Set Hyper-Threading to Disable  
Sysinfo program /spec/spec16/config/sysinfo.rev6914  
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
running on linux-n8wl Tue Nov 29 01:26:47 2016

This section contains SUT (System Under Test) info as seen by  
Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 107

Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = 101

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

## Platform Notes (Continued)

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 E5-2683 v4 @ 2.10GHz
  2 "physical id"s (chips)
  32 "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 : 16
    siblings  : 16
    physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
    physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  cache size : 40960 KB

```

```

From /proc/meminfo
MemTotal:      264055460 kB
HugePages_Total:    0
Hugepagesize:   2048 kB

```

```

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"

```

```

uname -a:
Linux linux-n8wl 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 3 Nov 28 09:50

```

SPEC is set to: /spec/spec16
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        ext4  632G  7.6G  623G   2% /spec

```

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 107

Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = 101

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

## Platform Notes (Continued)

hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Insyde Corp. 3.31 08/22/2016

Memory:

16x Samsung M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/spec/spec16/libs/32:/spec/spec16/libs/64:/spec/spec16/sh"

OMP\_NUM\_THREADS = "32"

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

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 107

Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = 101

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

## Base Portability Flags (Continued)

```

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 -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



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 107

Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = 101

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Nov-2016

Hardware Availability: Mar-2016

Software Availability: Dec-2015

## 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) -prof-use(pass 2) -fno-alias  
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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) -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: -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 -opt-prefetch -parallel

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) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 107

Huawei CH220 V3 (Intel Xeon E5-2683 v4)

SPECfp\_base2006 = 101

CPU2006 license: 3175

Test date: Nov-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Dec-2015

## Peak Optimization Flags (Continued)

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-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 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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Wed Dec 28 10:51:04 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 27 December 2016.

Standard Performance Evaluation Corporation

[info@spec.org](mailto:info@spec.org)

<http://www.spec.org/>