



SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp®2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

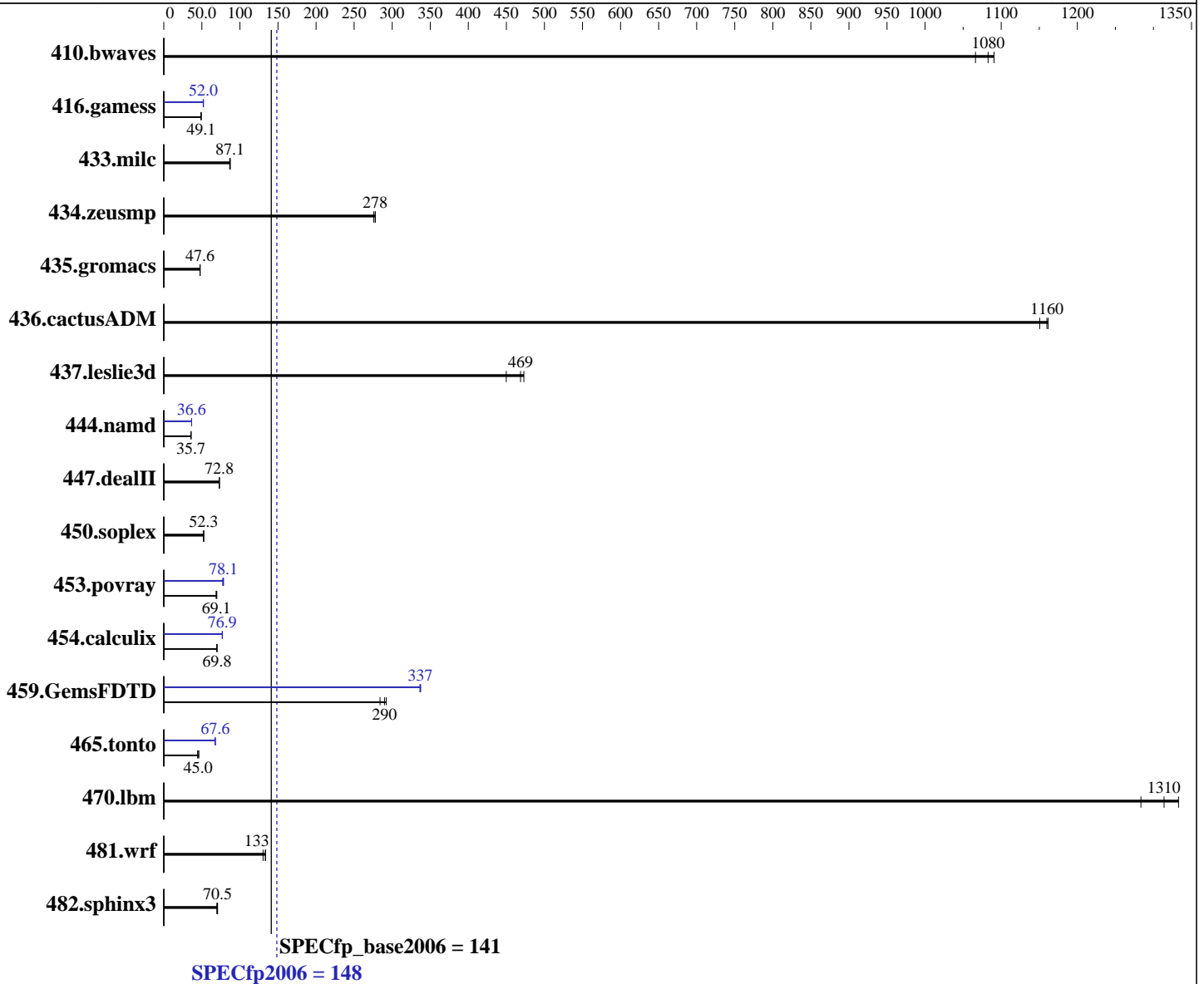
Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon Gold 6130
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 2100
 FPU: Integrated
 CPU(s) enabled: 32 cores, 2 chips, 16 cores/chip
 CPU(s) orderable: 1,2 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
 3.10.0-514.el7.x86_64
 Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux;
 Fortran: Version 17.0.0.098 of Intel Fortran Compiler for Linux
 Auto Parallel: Yes
 File System: xfs

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = **148**

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = **141**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

L3 Cache: 22 MB I+D on chip per chip
 Other Cache: None
 Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
 Disk Subsystem: 1 x 1200 GB SAS, 10000 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	12.5	1090	<u>12.6</u>	<u>1080</u>	12.7	1070	12.5	1090	<u>12.6</u>	<u>1080</u>	12.7	1070
416.gamess	<u>399</u>	<u>49.1</u>	399	49.1	399	49.0	376	52.1	378	51.8	<u>377</u>	<u>52.0</u>
433.milc	106	86.5	<u>105</u>	<u>87.1</u>	105	87.3	106	86.5	<u>105</u>	<u>87.1</u>	105	87.3
434.zeusmp	32.8	278	<u>32.8</u>	<u>278</u>	33.0	276	32.8	278	<u>32.8</u>	<u>278</u>	33.0	276
435.gromacs	<u>150</u>	<u>47.6</u>	150	47.5	149	47.8	<u>150</u>	<u>47.6</u>	150	47.5	149	47.8
436.cactusADM	10.3	1160	<u>10.3</u>	<u>1160</u>	10.4	1150	10.3	1160	<u>10.3</u>	<u>1160</u>	10.4	1150
437.leslie3d	19.9	473	<u>20.1</u>	<u>469</u>	20.9	450	19.9	473	<u>20.1</u>	<u>469</u>	20.9	450
444.namd	225	35.7	224	35.7	<u>224</u>	<u>35.7</u>	219	36.6	219	36.6	<u>219</u>	<u>36.6</u>
447.dealII	<u>157</u>	<u>72.8</u>	157	72.8	156	73.2	<u>157</u>	<u>72.8</u>	157	72.8	156	73.2
450.soplex	<u>159</u>	<u>52.3</u>	160	52.3	159	52.4	<u>159</u>	<u>52.3</u>	160	52.3	159	52.4
453.povray	76.3	69.7	77.4	68.7	<u>77.0</u>	<u>69.1</u>	<u>68.1</u>	<u>78.1</u>	67.8	78.5	68.8	77.3
454.calculix	118	69.8	<u>118</u>	<u>69.8</u>	118	69.7	107	77.1	<u>107</u>	<u>76.9</u>	107	76.8
459.GemsFDTD	37.4	284	<u>36.6</u>	<u>290</u>	36.3	292	31.5	336	31.4	337	<u>31.5</u>	<u>337</u>
465.tonto	213	46.1	<u>219</u>	<u>45.0</u>	221	44.5	146	67.6	146	67.5	<u>146</u>	<u>67.6</u>
470.lbm	10.7	1280	10.3	1330	<u>10.5</u>	<u>1310</u>	10.7	1280	10.3	1330	<u>10.5</u>	<u>1310</u>
481.wrf	<u>83.7</u>	<u>133</u>	83.7	133	85.7	130	<u>83.7</u>	<u>133</u>	83.7	133	85.7	130
482.sphinx3	276	70.7	<u>277</u>	<u>70.5</u>	280	69.6	276	70.7	<u>277</u>	<u>70.5</u>	280	69.6

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 Hyper-Threading to Disable
 Sysinfo program /spec17/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on localhost.localdomain Thu May 25 10:28:24 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>

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6130 CPU @ 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 : 22528 KB

```

```

From /proc/meminfo
MemTotal:      394145204 kB
HugePages_Total:    0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

```

```

uname -a:
Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 May 24 17:20

```

SPEC is set to: /spec17
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   898G  11G  888G   2% /

```

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 INSYDE Corp. 0.12 03/28/2017

Memory:

24x Micron 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666 MHz
Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Platform Notes (Continued)

(End of data from sysinfo program)

General Notes

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

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = "/spec17/libs/32:/spec17/libs/64:/spec17/sh10.2"

OMP_NUM_THREADS = "32"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

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

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Base Portability Flags (Continued)

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 -qopt-prefetch

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

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:

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 5



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Peak Optimization Flags (Continued)

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

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

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: basepeak = yes

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -inline-level=0
-qopt-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -inline-calloc -qopt-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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 148

Huawei CH121 V5 (Intel Xeon Gold 6130)

SPECfp_base2006 = 141

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Peak Optimization Flags (Continued)

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-ic17.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-SKL-V1.6.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 Jul 25 15:52:51 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 July 2017.