



SPEC[®] CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp[®]_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

CPU2006 license: 3175

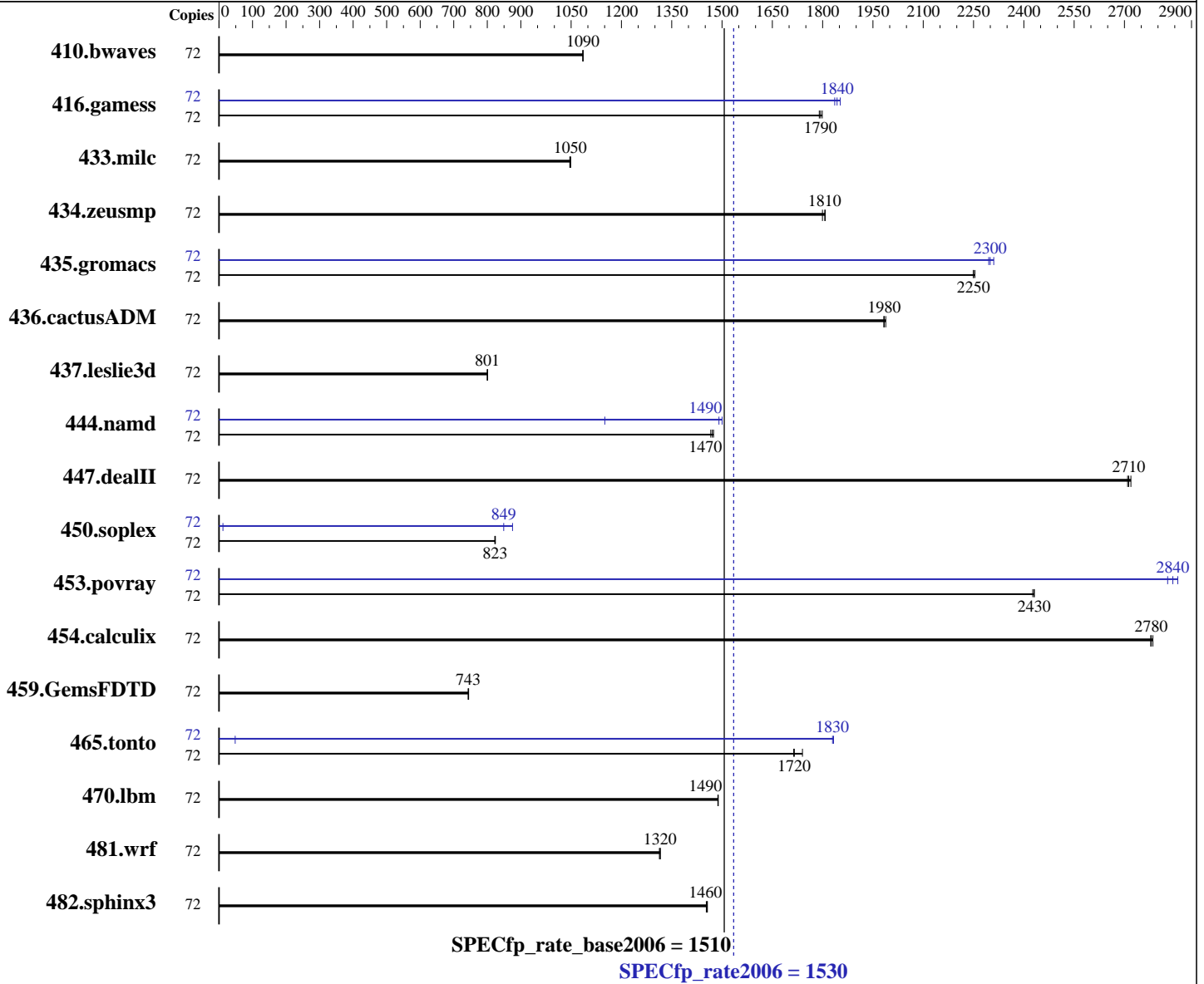
Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016



Hardware

CPU Name: Intel Xeon Gold 6154
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 36 cores, 2 chips, 18 cores/chip, 2 threads/core
 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: No
 File System: xfs

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

L3 Cache: 24.75 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: 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	72	901	1090	902	1080	<u>902</u>	<u>1090</u>	72	901	1090	902	1080	<u>902</u>	<u>1090</u>
416.gamess	72	788	1790	<u>786</u>	<u>1790</u>	784	1800	72	768	1840	<u>765</u>	<u>1840</u>	761	1850
433.milc	72	632	1050	<u>631</u>	<u>1050</u>	630	1050	72	632	1050	<u>631</u>	<u>1050</u>	630	1050
434.zeusmp	72	364	1800	362	1810	<u>363</u>	<u>1810</u>	72	364	1800	362	1810	<u>363</u>	<u>1810</u>
435.gromacs	72	<u>228</u>	<u>2250</u>	228	2250	229	2250	72	<u>224</u>	<u>2300</u>	223	2310	224	2300
436.cactusADM	72	<u>434</u>	<u>1980</u>	434	1980	433	1990	72	<u>434</u>	<u>1980</u>	434	1980	433	1990
437.leslie3d	72	846	800	845	801	<u>845</u>	<u>801</u>	72	846	800	845	801	<u>845</u>	<u>801</u>
444.namd	72	392	1470	394	1470	<u>393</u>	<u>1470</u>	72	502	1150	385	1500	<u>387</u>	<u>1490</u>
447.dealII	72	304	2710	<u>304</u>	<u>2710</u>	303	2720	72	304	2710	<u>304</u>	<u>2710</u>	303	2720
450.soplex	72	730	823	<u>730</u>	<u>823</u>	729	824	72	51034	11.8	<u>707</u>	<u>849</u>	686	875
453.povray	72	158	2430	158	2430	<u>158</u>	<u>2430</u>	72	134	2860	135	2830	<u>135</u>	<u>2840</u>
454.calculix	72	<u>214</u>	<u>2780</u>	214	2780	213	2780	72	<u>214</u>	<u>2780</u>	214	2780	213	2780
459.GemsFDTD	72	1028	743	1026	744	<u>1028</u>	<u>743</u>	72	1028	743	1026	744	<u>1028</u>	<u>743</u>
465.tonto	72	407	1740	413	1710	<u>413</u>	<u>1720</u>	72	14671	48.3	387	1830	<u>387</u>	<u>1830</u>
470.lbm	72	<u>665</u>	<u>1490</u>	665	1490	665	1490	72	<u>665</u>	<u>1490</u>	665	1490	665	1490
481.wrf	72	611	1320	612	1310	<u>611</u>	<u>1320</u>	72	611	1320	612	1310	<u>611</u>	<u>1320</u>
482.sphinx3	72	966	1450	964	1460	<u>964</u>	<u>1460</u>	72	966	1450	964	1460	<u>964</u>	<u>1460</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"

Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Set SNC to Enable

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

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

Test date: May-2017
Hardware Availability: Aug-2017
Software Availability: Nov-2016

Platform Notes (Continued)

Set IMC Interleaving to 1 way
Set Patrol Scrub to Disable
Sysinfo program /spec17/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on localhost.localdomain Wed May 31 05:10:52 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) Gold 6154 CPU @ 3.00GHz
 2 "physical id"s (chips)
 72 "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
cache size : 25344 KB
```

```
From /proc/meminfo
MemTotal:      394144692 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 28 03:31
```

```
SPEC is set to: /spec17
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   262G  85G  178G  33% /
```

Additional information from dmidecode:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

Platform Notes (Continued)

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. 0.10 02/14/2017

Memory:

24x Samsung M393A2K43BB1-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

General Notes

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

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

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

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

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64

416.gamess: -DSPEC_CPU_LP64

433.milc: -DSPEC_CPU_LP64

434.zeusmp: -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

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

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)

```
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 -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3

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

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

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-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_2017/linux/lib/ia32

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2017

Hardware Availability: Aug-2017

Software Availability: Nov-2016

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: -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
         -qopt-mem-layout-trans=3

```

447.dealII: basepeak = yes

```

450.soplex: -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) -qopt-malloc-options=3
           -qopt-mem-layout-trans=3

```

```

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 -qopt-mem-layout-trans=3

```

Fortran benchmarks:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

Huawei

SPECfp_rate2006 = 1530

Huawei CH121 V5 (Intel Xeon Gold 6154)

SPECfp_rate_base2006 = 1510

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)

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: basepeak = yes

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

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2)
-par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32
-qopt-mem-layout-trans=3

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-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 15:51:38 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 July 2017.