



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Huawei

SPECfp<sup>®</sup>2006 = 100

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = 96.4

CPU2006 license: 3175

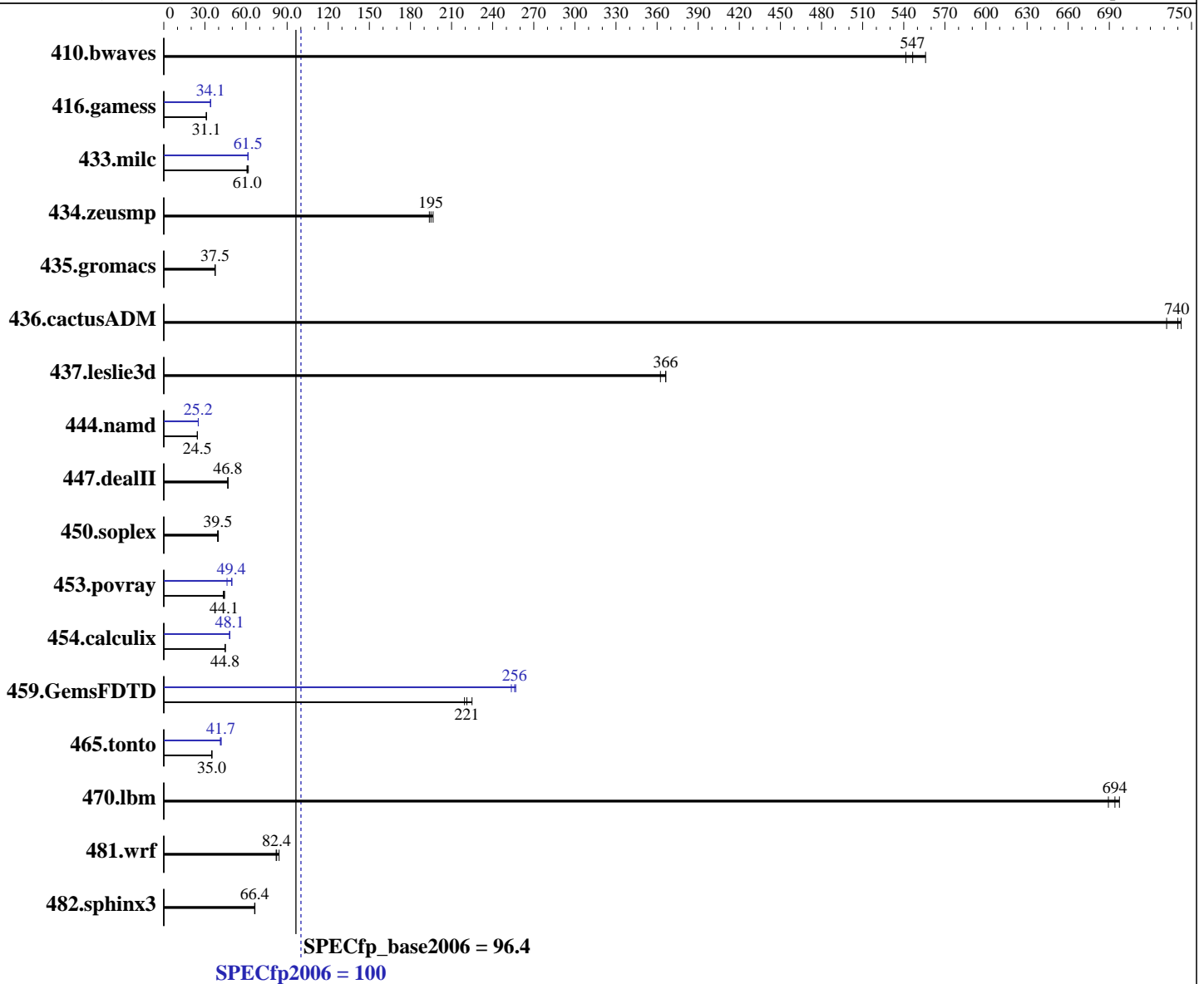
Test date: Mar-2015

Test sponsor: Huawei

Hardware Availability: Feb-2015

Tested by: Huawei

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2658 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip  
 CPU(s) orderable: 1,2 chip  
 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 7.0 (Maipo)  
 3.10.0-123.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;  
 Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Huawei

SPECfp2006 = **100**

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = **96.4**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2015

Hardware Availability: Feb-2015

Software Availability: Sep-2014

L3 Cache: 30 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 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	<u>24.9</u>	<u>547</u>	24.4	556	25.1	541	<u>24.9</u>	<u>547</u>	24.4	556	25.1	541
416.gamess	630	31.1	<u>630</u>	<u>31.1</u>	630	31.1	573	34.2	574	34.1	<u>574</u>	<u>34.1</u>
433.milc	149	61.7	<u>151</u>	<u>61.0</u>	151	60.7	149	61.5	150	61.4	<u>149</u>	<u>61.5</u>
434.zeusmp	<u>46.7</u>	<u>195</u>	47.0	194	46.3	197	<u>46.7</u>	<u>195</u>	47.0	194	46.3	197
435.gromacs	191	37.4	190	37.5	<u>190</u>	<u>37.5</u>	191	37.4	190	37.5	<u>190</u>	<u>37.5</u>
436.cactusADM	16.1	742	<u>16.1</u>	<u>740</u>	16.3	732	16.1	742	<u>16.1</u>	<u>740</u>	16.3	732
437.leslie3d	25.7	366	<u>25.7</u>	<u>366</u>	25.9	362	25.7	366	<u>25.7</u>	<u>366</u>	25.9	362
444.namd	<u>327</u>	<u>24.5</u>	327	24.5	327	24.5	<u>319</u>	<u>25.2</u>	319	25.2	319	25.2
447.dealII	244	46.9	245	46.7	<u>244</u>	<u>46.8</u>	244	46.9	245	46.7	<u>244</u>	<u>46.8</u>
450.soplex	<u>211</u>	<u>39.5</u>	209	39.8	212	39.3	<u>211</u>	<u>39.5</u>	209	39.8	212	39.3
453.povray	120	44.4	123	43.4	<u>121</u>	<u>44.1</u>	115	46.1	<u>108</u>	<u>49.4</u>	107	49.8
454.calculix	184	44.9	184	44.8	<u>184</u>	<u>44.8</u>	172	48.1	171	48.1	<u>172</u>	<u>48.1</u>
459.GemsFDTD	<u>48.0</u>	<u>221</u>	47.2	225	48.3	219	41.3	257	41.8	254	<u>41.4</u>	<u>256</u>
465.tonto	280	35.2	<u>281</u>	<u>35.0</u>	281	35.0	<u>236</u>	<u>41.7</u>	235	41.8	238	41.3
470.lbm	19.9	689	19.7	697	<u>19.8</u>	<u>694</u>	19.9	689	19.7	697	<u>19.8</u>	<u>694</u>
481.wrf	<u>136</u>	<u>82.4</u>	133	84.1	136	82.0	<u>136</u>	<u>82.4</u>	133	84.1	136	82.0
482.sphinx3	293	66.5	294	66.3	<u>293</u>	<u>66.4</u>	293	66.5	294	66.3	<u>293</u>	<u>66.4</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 Intel Hyper-threading Technology to Disable  
 Sysinfo program /spec15/config/sysinfo.rev6914  
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
 running on localhost.localdomain Mon Mar 16 16:20:35 2015

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

**Huawei**

**SPECfp2006 = 100**

**Huawei RH2288 V3 (Intel Xeon E5-2658 v3)**

**SPECfp\_base2006 = 96.4**

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Tested by:** Huawei

**Test date:** Mar-2015

**Hardware Availability:** Feb-2015

**Software Availability:** Sep-2014

## Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E5-2658 v3 @ 2.20GHz

2 "physical id"s (chips)

24 "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 : 12

siblings : 12

physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13

physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13

cache size : 30720 KB

From /proc/meminfo

MemTotal: 263720560 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

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

os-release:

NAME="Red Hat Enterprise Linux Server"

VERSION="7.0 (Maipo)"

ID="rhel"

ID\_LIKE="fedora"

VERSION\_ID="7.0"

PRETTY\_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"

ANSI\_COLOR="0;31"

CPE\_NAME="cpe:/o:redhat:enterprise\_linux:7.0:GA:server"

redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)

system-release-cpe: cpe:/o:redhat:enterprise\_linux:7.0:ga:server

uname -a:

Linux localhost.localdomain 3.10.0-123.el7.x86\_64 #1 SMP Mon May 5 11:16:57

EDT 2014 x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Mar 16 05:20

SPEC is set to: /spec15

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdal ext4 458G 38G 397G 9% /

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. 1.17 09/03/2014

Memory:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 100

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = 96.4

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2015

Hardware Availability: Feb-2015

Software Availability: Sep-2014

## Platform Notes (Continued)

8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz  
8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 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 = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"

OMP\_NUM\_THREADS = "24"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 100

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = 96.4

CPU2006 license: 3175

Test date: Mar-2015

Test sponsor: Huawei

Hardware Availability: Feb-2015

Tested by: Huawei

Software Availability: Sep-2014

## Base Portability Flags (Continued)

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 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 100

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = 96.4

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2015

Hardware Availability: Feb-2015

Software Availability: Sep-2014

## Peak Optimization Flags

### C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

### C++ benchmarks:

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

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

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

### Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -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(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-inline-calloc -opt-malloc-options=3 -auto -unroll4

### Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 100

Huawei RH2288 V3 (Intel Xeon E5-2658 v3)

SPECfp\_base2006 = 96.4

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Mar-2015

Hardware Availability: Feb-2015

Software Availability: Sep-2014

## Peak Optimization Flags (Continued)

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-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.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 Apr 8 11:02:40 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 7 April 2015.