



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Huawei

**SPECfp<sup>®</sup>2006 = 109**

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

**SPECfp\_base2006 = 103**

CPU2006 license: 3175

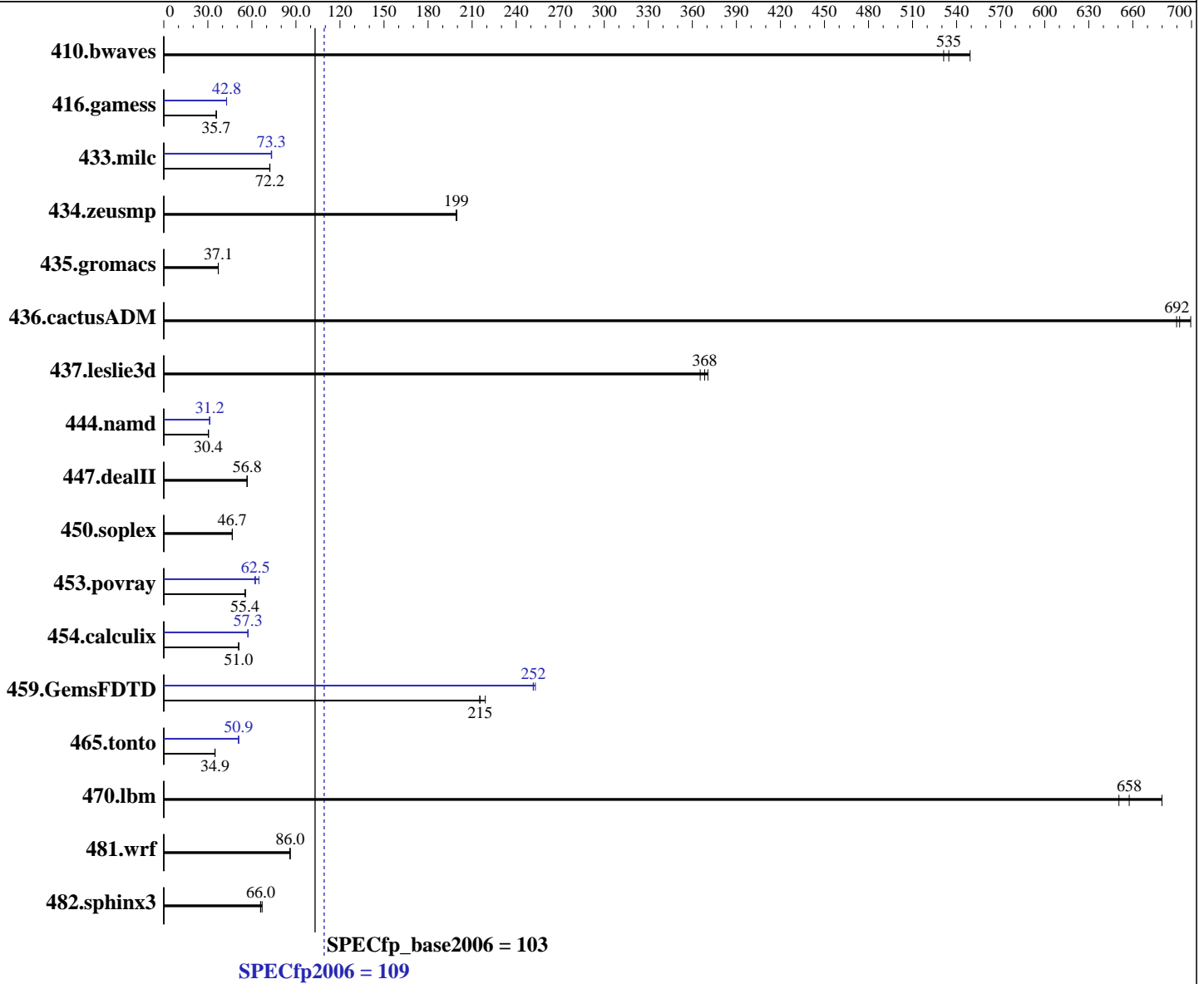
Test date: May-2015

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014



**Hardware**

CPU Name: Intel Xeon E5-2698 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2300  
 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: 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 = **109**

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = **103**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

L3 Cache: 40 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	24.7	549	25.6	531	<u>25.4</u>	<u>535</u>	24.7	549	25.6	531	<u>25.4</u>	<u>535</u>
416.gamess	546	35.9	549	35.7	<u>548</u>	<u>35.7</u>	458	42.7	<u>458</u>	<u>42.8</u>	458	42.8
433.milc	127	72.1	<u>127</u>	<u>72.2</u>	127	72.3	<u>125</u>	<u>73.3</u>	125	73.2	125	73.5
434.zeusmp	45.6	200	45.7	199	<u>45.7</u>	<u>199</u>	45.6	200	45.7	199	<u>45.7</u>	<u>199</u>
435.gromacs	<u>192</u>	<u>37.1</u>	193	37.1	192	37.2	<u>192</u>	<u>37.1</u>	193	37.1	192	37.2
436.cactusADM	17.1	699	17.3	690	<u>17.3</u>	<u>692</u>	17.1	699	17.3	690	<u>17.3</u>	<u>692</u>
437.leslie3d	25.4	371	<u>25.5</u>	<u>368</u>	25.7	365	25.4	371	<u>25.5</u>	<u>368</u>	25.7	365
444.namd	264	30.4	264	30.4	<u>264</u>	<u>30.4</u>	257	31.2	<u>257</u>	<u>31.2</u>	257	31.2
447.dealII	202	56.8	<u>202</u>	<u>56.8</u>	202	56.8	202	56.8	<u>202</u>	<u>56.8</u>	202	56.8
450.soplex	179	46.6	<u>179</u>	<u>46.7</u>	179	46.7	179	46.6	<u>179</u>	<u>46.7</u>	179	46.7
453.povray	<u>96.0</u>	<u>55.4</u>	95.7	55.6	96.0	55.4	<u>85.1</u>	<u>62.5</u>	82.1	64.8	85.8	62.0
454.calculix	162	51.0	162	51.0	<u>162</u>	<u>51.0</u>	144	57.4	144	57.3	<u>144</u>	<u>57.3</u>
459.GemsFDTD	48.4	219	49.3	215	<u>49.3</u>	<u>215</u>	42.2	252	<u>42.1</u>	<u>252</u>	41.9	253
465.tonto	283	34.8	282	34.9	<u>282</u>	<u>34.9</u>	<u>193</u>	<u>50.9</u>	194	50.8	193	51.0
470.lbm	<u>20.9</u>	<u>658</u>	21.1	651	20.2	680	<u>20.9</u>	<u>658</u>	21.1	651	20.2	680
481.wrf	<u>130</u>	<u>86.0</u>	130	85.9	130	86.1	<u>130</u>	<u>86.0</u>	130	85.9	130	86.1
482.sphinx3	291	67.0	296	65.9	<u>295</u>	<u>66.0</u>	291	67.0	296	65.9	<u>295</u>	<u>66.0</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 Intel Hyper-Threading to Disable  
 Sysinfo program /spec15/config/sysinfo.rev6914  
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
 running on localhost.localdomain Tue May 12 18:29:41 2015

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



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 109

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = 103

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014

## 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 E5-2698 v3 @ 2.30GHz
  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:      263577520 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 May 12 13:35

```

SPEC is set to: /spec15
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  433G   67G  345G  17% /

```

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. 1.36 04/09/2015

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 109

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = 103

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

Test date: May-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

## Platform Notes (Continued)

### Memory:

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 = "32"
```

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
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 109

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = 103

CPU2006 license: 3175

Test date: May-2015

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014

## Base Portability Flags (Continued)

```

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 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 109

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = 103

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2015

Hardware Availability: Sep-2014

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 = 109

Huawei RH1288 V3 (Intel Xeon E5-2698 v3)

SPECfp\_base2006 = 103

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2015

Hardware Availability: Sep-2014

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 Jun 17 10:48:13 2015 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 16 June 2015.