



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Huawei

SPECfp<sup>®</sup>2006 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

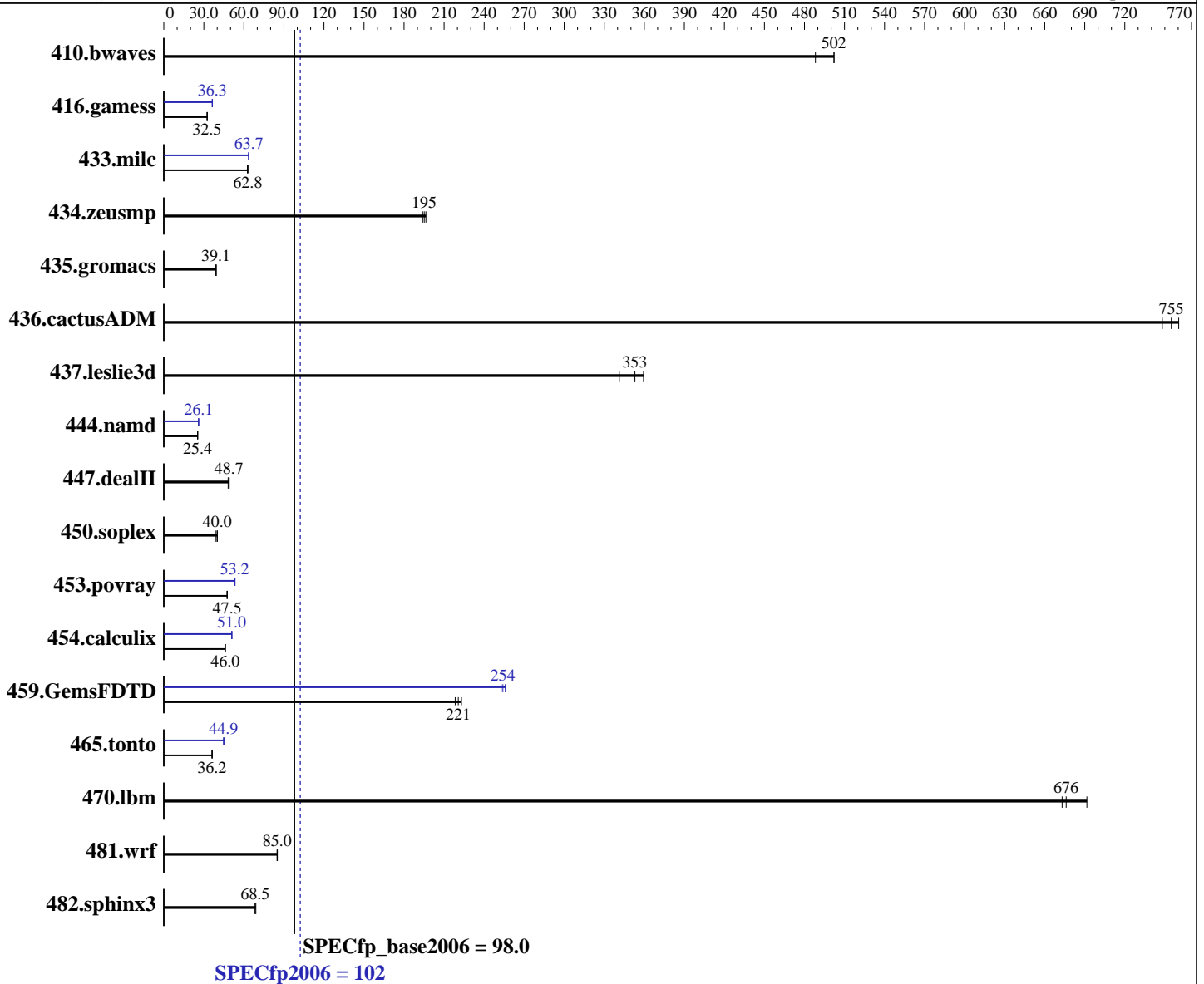
Test date: Dec-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2650 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test date: Dec-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014

L3 Cache: 25 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	27.8	488	<u>27.1</u>	<u>502</u>	27.1	502	27.8	488	<u>27.1</u>	<u>502</u>	27.1	502
416.gamess	603	32.5	<u>603</u>	<u>32.5</u>	602	32.5	540	36.3	<u>539</u>	<u>36.3</u>	537	36.5
433.milc	147	62.6	<u>146</u>	<u>62.8</u>	145	63.1	144	63.8	145	63.4	<u>144</u>	<u>63.7</u>
434.zeusmp	46.9	194	46.3	196	<u>46.6</u>	<u>195</u>	46.9	194	46.3	196	<u>46.6</u>	<u>195</u>
435.gromacs	<u>182</u>	<u>39.1</u>	182	39.1	182	39.2	<u>182</u>	<u>39.1</u>	182	39.1	182	39.2
436.cactusADM	15.7	760	16.0	748	<u>15.8</u>	<u>755</u>	15.7	760	16.0	748	<u>15.8</u>	<u>755</u>
437.leslie3d	26.2	359	27.5	341	<u>26.6</u>	<u>353</u>	26.2	359	27.5	341	<u>26.6</u>	<u>353</u>
444.namd	316	25.4	<u>316</u>	<u>25.4</u>	317	25.3	<u>307</u>	<u>26.1</u>	307	26.1	308	26.1
447.dealII	237	48.2	233	49.0	<u>235</u>	<u>48.7</u>	237	48.2	233	49.0	<u>235</u>	<u>48.7</u>
450.soplex	213	39.1	208	40.1	<u>208</u>	<u>40.0</u>	213	39.1	208	40.1	<u>208</u>	<u>40.0</u>
453.povray	112	47.4	<u>112</u>	<u>47.5</u>	112	47.6	99.6	53.4	<u>100</u>	<u>53.2</u>	100	53.0
454.calculix	<u>179</u>	<u>46.0</u>	179	46.1	179	46.0	162	51.0	<u>162</u>	<u>51.0</u>	162	50.9
459.GemsFDTD	47.6	223	<u>48.1</u>	<u>221</u>	48.6	218	41.5	256	42.0	253	<u>41.8</u>	<u>254</u>
465.tonto	273	36.1	<u>272</u>	<u>36.2</u>	271	36.3	219	44.9	<u>219</u>	<u>44.9</u>	219	45.0
470.lbm	19.9	692	<u>20.3</u>	<u>676</u>	20.4	673	19.9	692	<u>20.3</u>	<u>676</u>	20.4	673
481.wrf	131	85.1	<u>131</u>	<u>85.0</u>	132	84.9	131	85.1	<u>131</u>	<u>85.0</u>	132	84.9
482.sphinx3	<u>285</u>	<u>68.5</u>	287	68.0	283	69.0	<u>285</u>	<u>68.5</u>	287	68.0	283	69.0

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  
 Set Hyper-Threading to Disabled  
 Baseboard Management Controller used to adjust the fan speed to 100%  
 Sysinfo program /spec15/config/sysinfo.rev6914  
 \$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1  
 running on localhost.localdomain Thu Jan 2 01:41:11 2014

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 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2014

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 E5-2650 v3 @ 2.30GHz
 2 "physical id"s (chips)
 20 "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     : 10
  siblings      : 10
  physical 0    : cores 0 1 2 3 4 8 9 10 11 12
  physical 1    : cores 0 1 2 3 4 8 9 10 11 12
cache size     : 25600 KB

```

```

From /proc/meminfo
MemTotal:      263721024 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 Jan 1 22:59

```

SPEC is set to: /spec15
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root ext4 439G  19G 398G   5% /

```

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. 1.19 10/10/2014

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test date: Dec-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014

## Platform Notes (Continued)

### Memory:

8x NO DIMM NO DIMM 3 rank  
8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz  
8x Samsung M393A2G40DB0-CPB 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 = "20"
```

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
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test date: Dec-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

Software Availability: Sep-2014

## Base Portability Flags (Continued)

```

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 2006-2015 Standard Performance Evaluation Corporation

Huawei

SPECfp2006 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Dec-2014

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 = 102

Huawei RH2288H V3 (Intel Xeon E5-2650 v3)

SPECfp\_base2006 = 98.0

CPU2006 license: 3175

Test date: Dec-2014

Test sponsor: Huawei

Hardware Availability: Sep-2014

Tested by: Huawei

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-V1.1.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-V1.1.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 Tue Jan 27 13:27:01 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 January 2015.