



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = **91.0**

### Huawei CH140 (Intel Xeon E5-2658 v2)

SPECfp\_base2006 = **87.3**

CPU2006 license: 3175

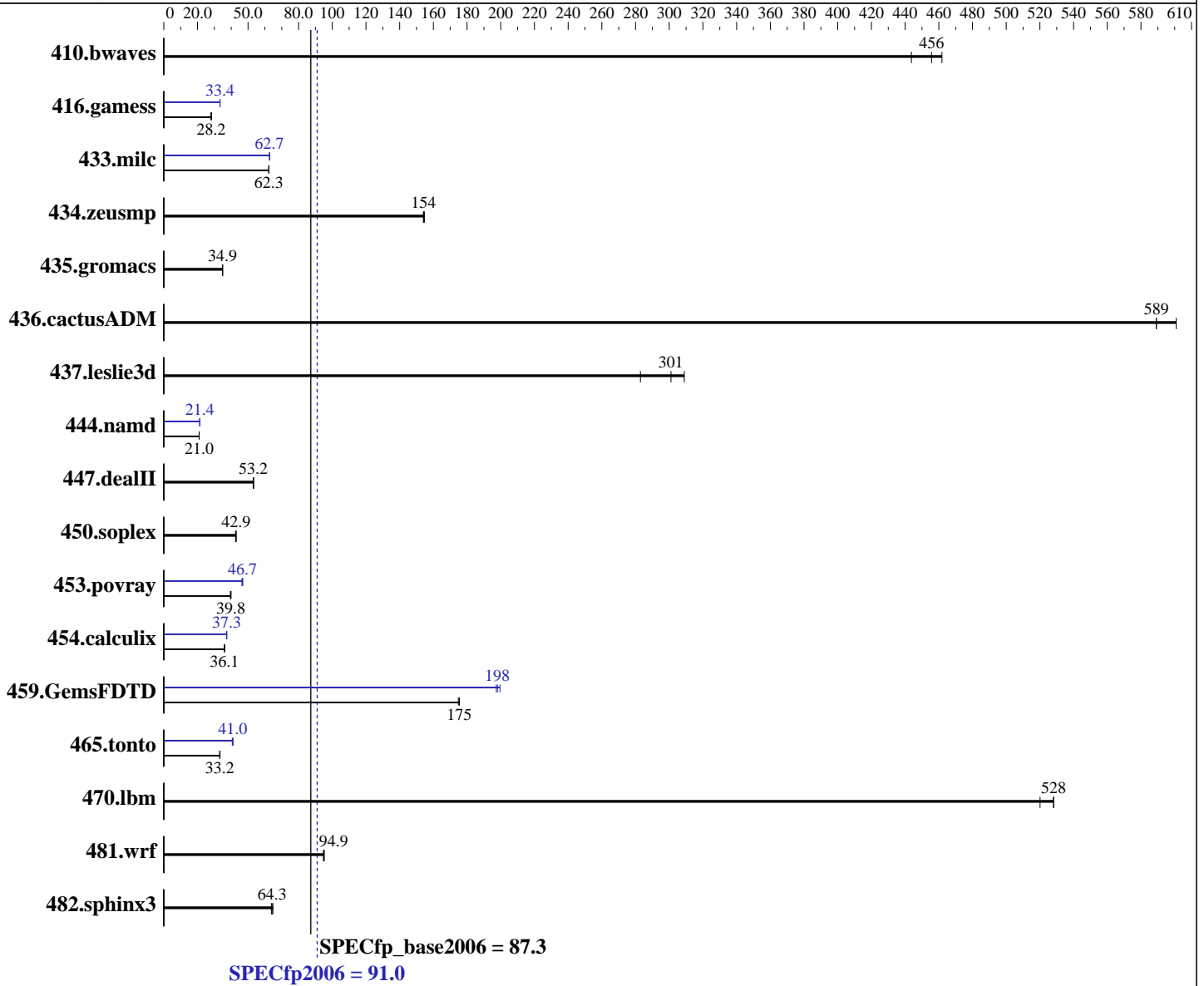
Test sponsor: Huawei

Tested by: Huawei

Test date: Aug-2014

Hardware Availability: Sep-2013

Software Availability: Nov-2013



Hardware	
CPU Name:	Intel Xeon E5-2658 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2400
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

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Software	
Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago)
	2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
	Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext3

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L3 Cache: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
 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	30.6	444	29.4	462	<b><u>29.8</u></b>	<b><u>456</u></b>	30.6	444	29.4	462	<b><u>29.8</u></b>	<b><u>456</u></b>
416.gamess	695	28.2	697	28.1	<b><u>695</u></b>	<b><u>28.2</u></b>	587	33.4	587	33.3	<b><u>587</u></b>	<b><u>33.4</u></b>
433.milc	147	62.3	<b><u>147</u></b>	<b><u>62.3</u></b>	147	62.3	146	62.9	146	62.7	<b><u>146</u></b>	<b><u>62.7</u></b>
434.zeusmp	58.8	155	59.0	154	<b><u>59.0</u></b>	<b><u>154</u></b>	58.8	155	59.0	154	<b><u>59.0</u></b>	<b><u>154</u></b>
435.gromacs	205	34.9	<b><u>205</u></b>	<b><u>34.9</u></b>	205	34.9	205	34.9	<b><u>205</u></b>	<b><u>34.9</u></b>	205	34.9
436.cactusADM	20.3	589	19.9	601	<b><u>20.3</u></b>	<b><u>589</u></b>	20.3	589	19.9	601	<b><u>20.3</u></b>	<b><u>589</u></b>
437.leslie3d	30.4	309	<b><u>31.2</u></b>	<b><u>301</u></b>	33.2	283	30.4	309	<b><u>31.2</u></b>	<b><u>301</u></b>	33.2	283
444.namd	382	21.0	<b><u>382</u></b>	<b><u>21.0</u></b>	382	21.0	<b><u>376</u></b>	<b><u>21.4</u></b>	375	21.4	376	21.4
447.dealII	215	53.3	<b><u>215</u></b>	<b><u>53.2</u></b>	215	53.1	215	53.3	<b><u>215</u></b>	<b><u>53.2</u></b>	215	53.1
450.soplex	<b><u>194</u></b>	<b><u>42.9</u></b>	194	42.9	196	42.6	<b><u>194</u></b>	<b><u>42.9</u></b>	194	42.9	196	42.6
453.povray	133	39.9	135	39.5	<b><u>134</u></b>	<b><u>39.8</u></b>	113	46.9	115	46.4	<b><u>114</u></b>	<b><u>46.7</u></b>
454.calculix	229	36.1	229	36.0	<b><u>229</u></b>	<b><u>36.1</u></b>	221	37.4	<b><u>221</u></b>	<b><u>37.3</u></b>	221	37.3
459.GemsFDTD	60.7	175	60.5	175	<b><u>60.5</u></b>	<b><u>175</u></b>	<b><u>53.6</u></b>	<b><u>198</u></b>	53.2	200	53.8	197
465.tonto	296	33.2	<b><u>296</u></b>	<b><u>33.2</u></b>	295	33.4	240	41.0	<b><u>240</u></b>	<b><u>41.0</u></b>	242	40.6
470.lbm	<b><u>26.0</u></b>	<b><u>528</u></b>	26.4	520	26.0	528	<b><u>26.0</u></b>	<b><u>528</u></b>	26.4	520	26.0	528
481.wrf	117	95.3	<b><u>118</u></b>	<b><u>94.9</u></b>	118	94.8	117	95.3	<b><u>118</u></b>	<b><u>94.9</u></b>	118	94.8
482.sphinx3	305	63.8	301	64.8	<b><u>303</u></b>	<b><u>64.3</u></b>	305	63.8	301	64.8	<b><u>303</u></b>	<b><u>64.3</u></b>

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

Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on localhost Mon Aug 4 17:13:15 2014

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) CPU E5-2658 v2 @ 2.40GHz  
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## Platform Notes (Continued)

```

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:      132105632 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 4 10:28

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  455G  113G  319G  27% /

Additional information from dmidecode:
Memory:
8x Samsung M393B2G70BH0-CMA 16 GB 1866 MHz 2 rank

(End of data from sysinfo program)

```

## General Notes

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

```

KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "20"

```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```



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## 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.lelie3d: -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:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:  
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias



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## 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:

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

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xAVX(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.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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

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## Peak Optimization Flags (Continued)

416.gamess: -xAVX(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(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: -xAVX(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

454.calculix: -xAVX -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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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