



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = 68.6

Huawei BH640 V2 (Intel Xeon E5-4607 v2)

SPECfp\_base2006 = 66.9

CPU2006 license: 3175

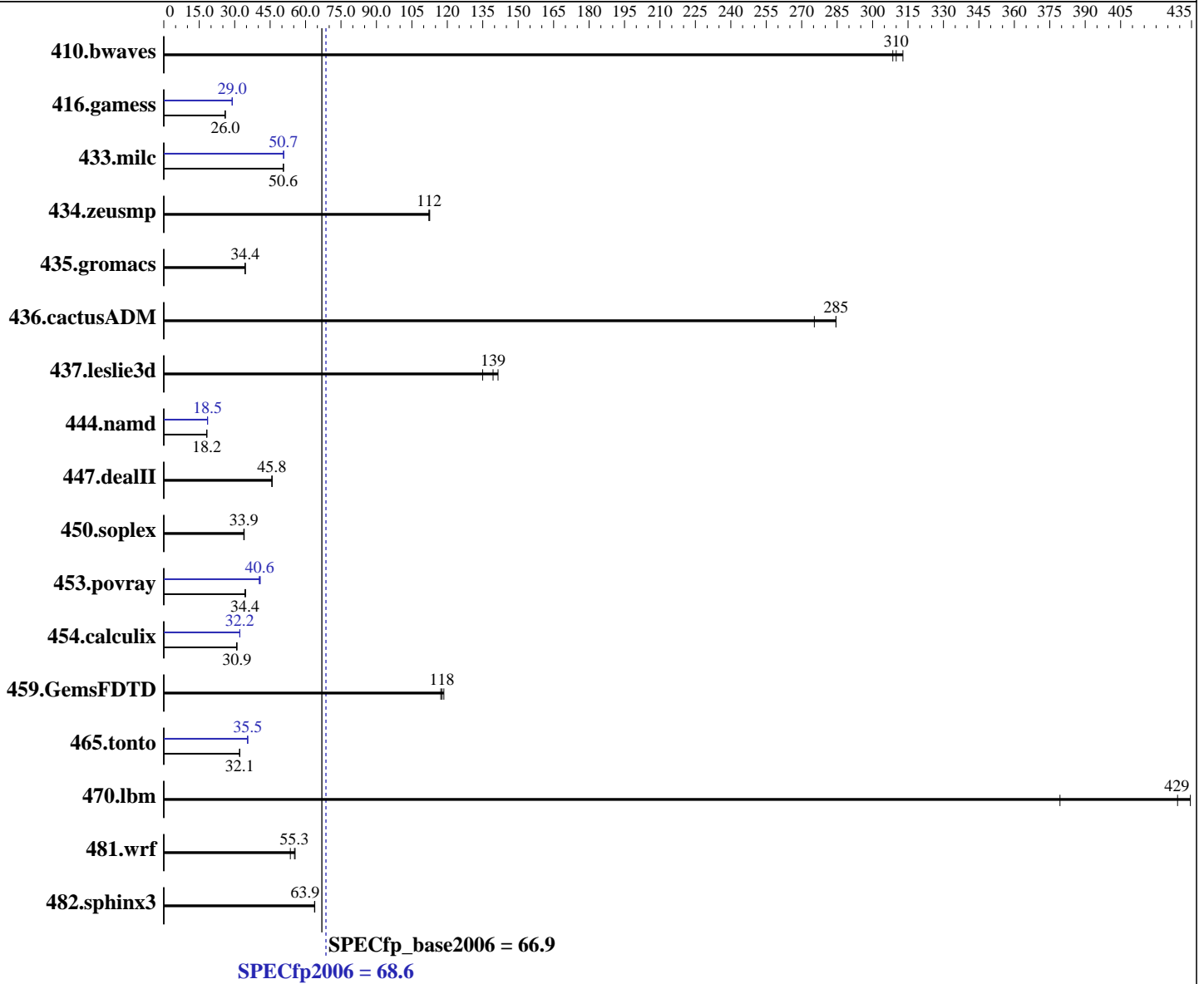
Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Apr-2014

Software Availability: Nov-2013



Hardware	
CPU Name:	Intel Xeon E5-4607 v2
CPU Characteristics:	
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	2,4 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:	ext4

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L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, 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	<b>43.8</b>	<b>310</b>	44.0	309	43.4	313	<b>43.8</b>	<b>310</b>	44.0	309	43.4	313
416.gamess	755	25.9	752	26.0	<b>753</b>	<b>26.0</b>	<b>676</b>	<b>29.0</b>	676	28.9	676	29.0
433.milc	181	50.7	181	50.6	<b>181</b>	<b>50.6</b>	<b>181</b>	<b>50.7</b>	181	50.7	181	50.7
434.zeusmp	81.1	112	<b>81.1</b>	<b>112</b>	80.8	113	81.1	112	<b>81.1</b>	<b>112</b>	80.8	113
435.gromacs	<b>207</b>	<b>34.4</b>	207	34.5	208	34.4	<b>207</b>	<b>34.4</b>	207	34.5	208	34.4
436.cactusADM	<b>42.0</b>	<b>285</b>	43.4	275	42.0	285	<b>42.0</b>	<b>285</b>	43.4	275	42.0	285
437.leslie3d	<b>67.4</b>	<b>139</b>	66.4	141	69.6	135	<b>67.4</b>	<b>139</b>	66.4	141	69.6	135
444.namd	<b>441</b>	<b>18.2</b>	441	18.2	441	18.2	<b>433</b>	<b>18.5</b>	433	18.5	433	18.5
447.dealII	<b>250</b>	<b>45.8</b>	250	45.8	250	45.8	<b>250</b>	<b>45.8</b>	250	45.8	250	45.8
450.soplex	<b>246</b>	<b>33.9</b>	245	34.0	246	33.9	<b>246</b>	<b>33.9</b>	245	34.0	246	33.9
453.povray	154	34.6	<b>155</b>	<b>34.4</b>	155	34.4	<b>131</b>	<b>40.6</b>	130	40.8	132	40.4
454.calculix	<b>267</b>	<b>30.9</b>	266	31.0	268	30.8	<b>256</b>	<b>32.2</b>	256	32.2	257	32.2
459.GemsFDTD	90.5	117	89.5	119	<b>90.1</b>	<b>118</b>	90.5	117	89.5	119	<b>90.1</b>	<b>118</b>
465.tonto	306	32.1	306	32.1	<b>306</b>	<b>32.1</b>	277	35.5	278	35.4	<b>277</b>	<b>35.5</b>
470.lbm	31.6	435	36.2	379	<b>32.0</b>	<b>429</b>	31.6	435	36.2	379	<b>32.0</b>	<b>429</b>
481.wrf	<b>202</b>	<b>55.3</b>	201	55.6	209	53.6	<b>202</b>	<b>55.3</b>	201	55.6	209	53.6
482.sphinx3	305	63.9	306	63.8	<b>305</b>	<b>63.9</b>	305	63.9	306	63.8	<b>305</b>	<b>63.9</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

BIOS configuration:  
 Set Power Efficiency Mode to Custom  
 Set Hyper-Threading to Disabled  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on localhost.localdomain Fri Sep 5 20:06:02 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>

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## Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-4607 v2 @ 2.60GHz
 4 "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 : 6
  siblings  : 6
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  physical 2: cores 0 1 2 3 4 5
  physical 3: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
MemTotal:      264477564 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.localdomain 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 Sep 5 12:22

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  411G  126G  264G  33% /

Additional information from dmidecode:
Memory:
 4x Hynix HMT42GR7AFR4C-PB 16 GB 1600 MHz 2 rank
12x Hynix HMT42GR7MFR4C-PB 16 GB 1600 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"

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## General Notes (Continued)

OMP\_NUM\_THREADS = "24"

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

## 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  
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

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## Base Optimization Flags (Continued)

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

## 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

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## Peak Optimization Flags (Continued)

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

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: basepeak = yes

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 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 Fri Oct 17 18:22:12 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 17 October 2014.