



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = **81.7**

Huawei BH640 V2 (Intel Xeon E5-4627 v2)

SPECfp\_base2006 = **79.6**

CPU2006 license: 3175

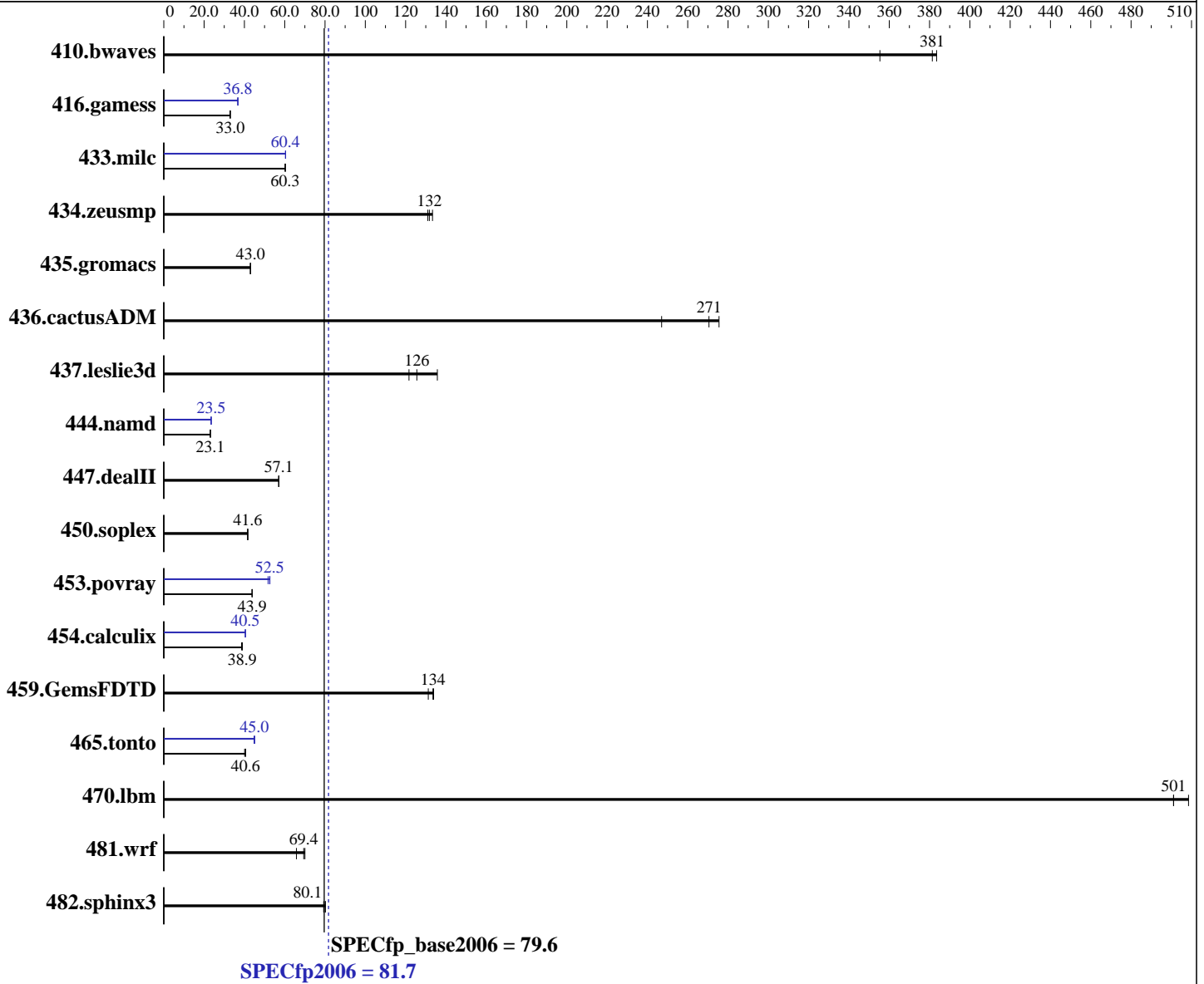
Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013



**Hardware**

CPU Name: Intel Xeon E5-4627 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 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: 16 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 600 GB SAS, 10000 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>35.6</b>	<b>381</b>	35.4	384	38.2	355	<b>35.6</b>	<b>381</b>	35.4	384	38.2	355
416.gamess	596	32.8	<b>593</b>	<b>33.0</b>	593	33.0	533	36.7	532	36.8	<b>533</b>	<b>36.8</b>
433.milc	153	60.2	152	60.3	<b>152</b>	<b>60.3</b>	152	60.4	<b>152</b>	<b>60.4</b>	152	60.5
434.zeusmp	<b>69.1</b>	<b>132</b>	68.2	133	69.4	131	<b>69.1</b>	<b>132</b>	68.2	133	69.4	131
435.gromacs	166	42.9	<b>166</b>	<b>43.0</b>	166	43.0	166	42.9	<b>166</b>	<b>43.0</b>	166	43.0
436.cactusADM	48.4	247	43.4	276	<b>44.2</b>	<b>271</b>	48.4	247	43.4	276	<b>44.2</b>	<b>271</b>
437.leslie3d	69.2	136	77.3	122	<b>74.9</b>	<b>126</b>	69.2	136	77.3	122	<b>74.9</b>	<b>126</b>
444.namd	<b>347</b>	<b>23.1</b>	347	23.1	347	23.1	341	23.5	341	23.5	<b>341</b>	<b>23.5</b>
447.dealII	201	57.0	<b>200</b>	<b>57.1</b>	200	57.1	201	57.0	<b>200</b>	<b>57.1</b>	200	57.1
450.soplex	200	41.6	200	41.7	<b>200</b>	<b>41.6</b>	200	41.6	200	41.7	<b>200</b>	<b>41.6</b>
453.povray	121	43.9	122	43.8	<b>121</b>	<b>43.9</b>	101	52.7	103	51.7	<b>101</b>	<b>52.5</b>
454.calculix	214	38.6	211	39.0	<b>212</b>	<b>38.9</b>	204	40.5	<b>204</b>	<b>40.5</b>	204	40.5
459.GemsFDTD	79.2	134	80.8	131	<b>79.4</b>	<b>134</b>	79.2	134	80.8	131	<b>79.4</b>	<b>134</b>
465.tonto	243	40.6	245	40.1	<b>243</b>	<b>40.6</b>	220	44.8	<b>219</b>	<b>45.0</b>	218	45.1
470.lbm	<b>27.4</b>	<b>501</b>	27.4	501	27.0	509	<b>27.4</b>	<b>501</b>	27.4	501	27.0	509
481.wrf	170	65.8	<b>161</b>	<b>69.4</b>	159	70.0	170	65.8	<b>161</b>	<b>69.4</b>	159	70.0
482.sphinx3	<b>243</b>	<b>80.1</b>	246	79.3	243	80.2	<b>243</b>	<b>80.1</b>	246	79.3	243	80.2

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.localdomain Thu Sep 11 18:08:05 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 E5-4627 v2 @ 3.30GHz  
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## Platform Notes (Continued)

```

4 "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 : 8
siblings  : 8
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
physical 2: cores 0 1 2 3 4 5 6 7
physical 3: cores 0 1 2 3 4 5 6 7
cache size : 16384 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 10 18:19

```

SPEC is set to: /spec
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda6       ext4     355G      73G   265G  22% /

```

Additional information from dmidecode:

```

Memory:
16x 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"
OMP_NUM_THREADS = "32"

```

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

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## General Notes (Continued)

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

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

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## Base Optimization Flags (Continued)

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

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