



# SPEC<sup>®</sup> CFP2006 Result

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## Huawei

SPECfp<sup>®</sup>2006 = **85.3**

Huawei RH2288H V2 (Intel Xeon E5-2630 V2)

SPECfp\_base2006 = **82.5**

CPU2006 license: 3175

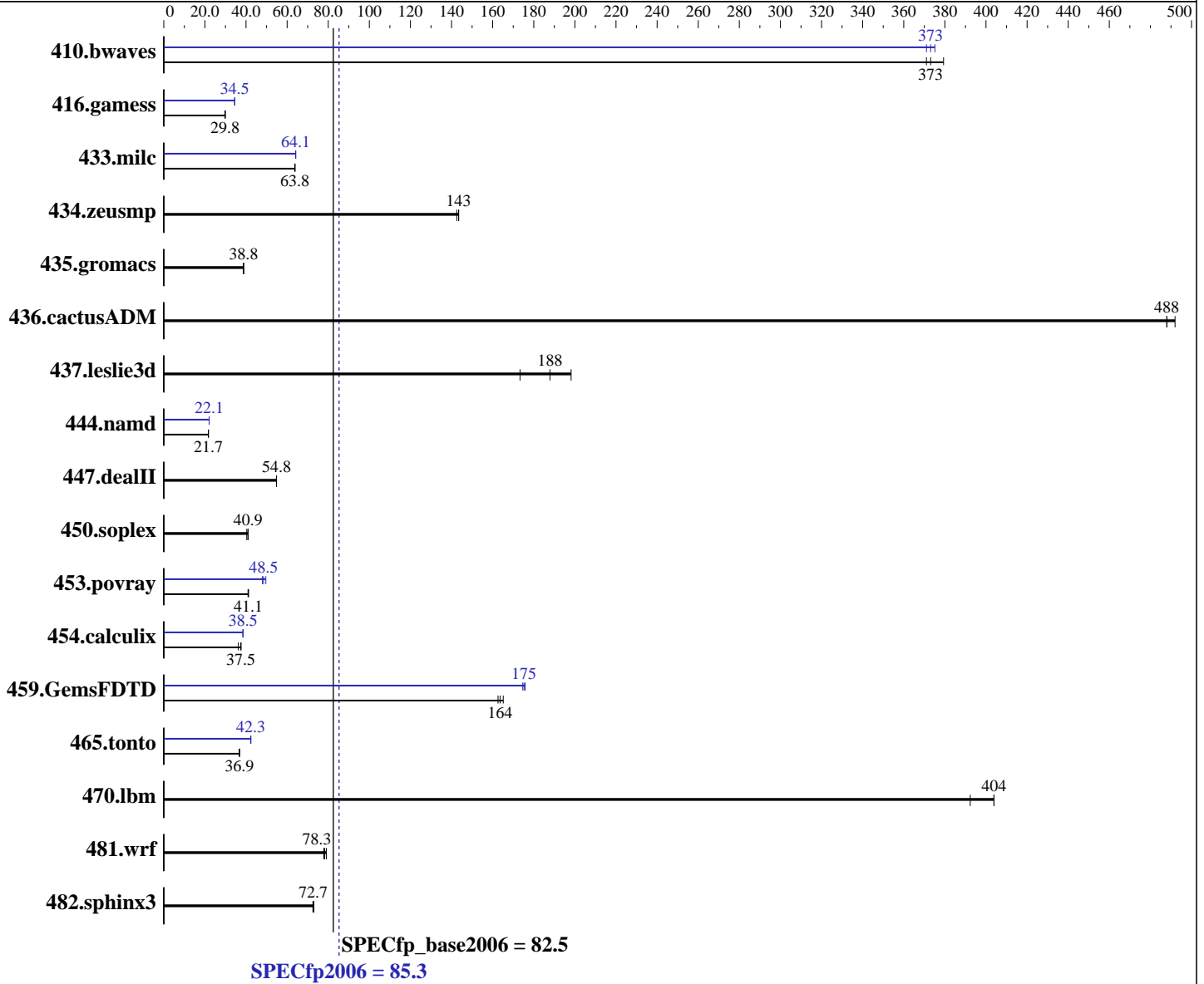
Test sponsor: Huawei

Tested by: Huawei

Test date: Apr-2014

Hardware Availability: Sep-2013

Software Availability: Nov-2013



**Hardware**

CPU Name: Intel Xeon E5-2630 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x 300 GB SAS, 10K 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	36.6	371	<b>36.4</b>	<b>373</b>	35.8	379	36.2	375	36.6	371	<b>36.4</b>	<b>373</b>
416.gamess	<b>656</b>	<b>29.8</b>	657	29.8	655	29.9	567	34.5	<b>567</b>	<b>34.5</b>	568	34.5
433.milc	144	63.8	144	63.8	<b>144</b>	<b>63.8</b>	143	64.1	<b>143</b>	<b>64.1</b>	143	64.2
434.zeusmp	<b>63.4</b>	<b>143</b>	63.4	143	63.8	143	<b>63.4</b>	<b>143</b>	63.4	143	63.8	143
435.gromacs	<b>184</b>	<b>38.8</b>	184	38.8	184	38.8	<b>184</b>	<b>38.8</b>	184	38.8	184	38.8
436.cactusADM	24.3	492	24.5	488	<b>24.5</b>	<b>488</b>	24.3	492	24.5	488	<b>24.5</b>	<b>488</b>
437.leslie3d	<b>50.0</b>	<b>188</b>	47.4	198	54.2	173	<b>50.0</b>	<b>188</b>	47.4	198	54.2	173
444.namd	370	21.7	<b>370</b>	<b>21.7</b>	370	21.7	<b>364</b>	<b>22.1</b>	363	22.1	364	22.1
447.dealII	209	54.9	<b>209</b>	<b>54.8</b>	209	54.8	209	54.9	<b>209</b>	<b>54.8</b>	209	54.8
450.soplex	207	40.4	<b>204</b>	<b>40.9</b>	203	41.0	207	40.4	<b>204</b>	<b>40.9</b>	203	41.0
453.povray	<b>129</b>	<b>41.1</b>	129	41.2	130	41.0	107	49.6	<b>110</b>	<b>48.5</b>	111	48.0
454.calculix	220	37.6	<b>220</b>	<b>37.5</b>	228	36.3	<b>214</b>	<b>38.5</b>	214	38.5	214	38.5
459.GemsFDTD	<b>64.9</b>	<b>164</b>	65.2	163	64.2	165	60.7	175	60.3	176	<b>60.5</b>	<b>175</b>
465.tonto	<b>267</b>	<b>36.9</b>	267	36.9	268	36.7	232	42.3	233	42.3	<b>232</b>	<b>42.3</b>
470.lbm	34.0	404	35.0	392	<b>34.0</b>	<b>404</b>	34.0	404	35.0	392	<b>34.0</b>	<b>404</b>
481.wrf	141	79.1	<b>143</b>	<b>78.3</b>	143	77.9	141	79.1	<b>143</b>	<b>78.3</b>	143	77.9
482.sphinx3	269	72.5	267	73.0	<b>268</b>	<b>72.7</b>	269	72.5	267	73.0	<b>268</b>	<b>72.7</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 Tue Apr 8 18:16:09 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 E5-2630 v2 @ 2.60GHz  
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## Platform Notes (Continued)

2 "physical id"s (chips)  
12 "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
cache size : 15360 KB
```

From /proc/meminfo

```
MemTotal:      264478184 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 Apr 7 12:42

SPEC is set to: /spec

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  272G  8.3G  250G   4% /
```

Additional information from dmidecode:

Memory:

```
13x Hynix HMT42GR7AFR4C-RD 16 GB 1867 MHz 2 rank
3x Samsung M393B2G70DB0-CMA 16 GB 1867 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 = "12"
```

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

Transparent Huge Pages enabled with:

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## General Notes (Continued)

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
The Huawei RH2288H v2 and Huawei RH2288 v2 and  
the Huawei RH1288 v2 models are electronically equivalent.  
The results have been measured on a Huawei RH2288H v2 model

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

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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