



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = **73.7**

### Huawei CH140 (Intel Xeon E5-2620 v2)

SPECfp\_base2006 = **71.2**

CPU2006 license: 3175

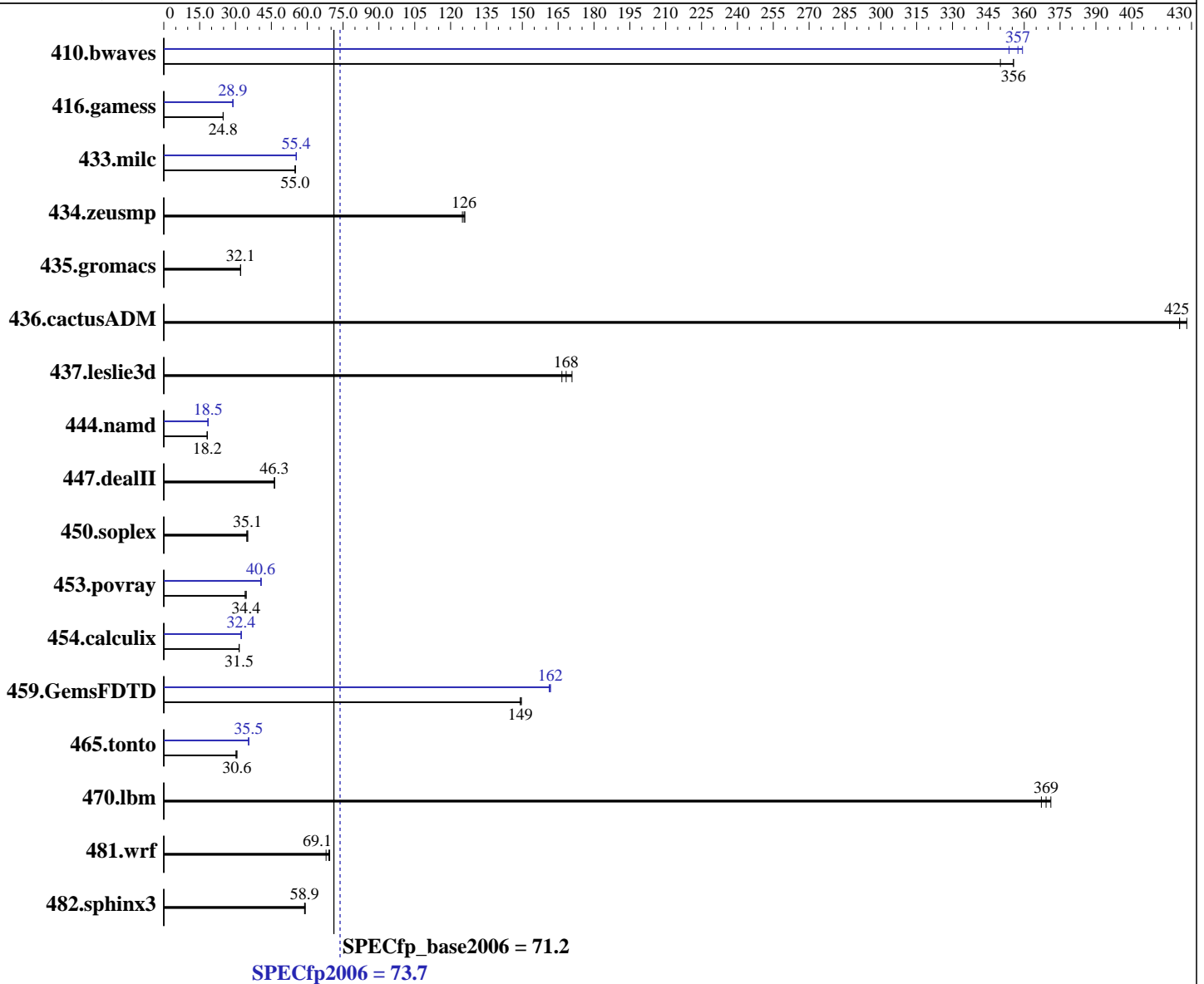
Test date: Jul-2014

Test sponsor: Huawei

Hardware Availability: Sep-2013

Tested by: Huawei

Software Availability: Nov-2013



Hardware	
CPU Name:	Intel Xeon E5-2620 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.60 GHz
CPU MHz:	2100
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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)
Compiler:	2.6.32-431.el6.x86_64 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: 15 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	38.8	350	<b>38.2</b>	<b>356</b>	38.2	356	37.8	359	<b>38.0</b>	<b>357</b>	38.4	354
416.gamess	<b>788</b>	<b>24.8</b>	788	24.9	789	24.8	677	28.9	677	28.9	<b>677</b>	<b>28.9</b>
433.milc	<b>167</b>	<b>55.0</b>	167	55.1	167	54.9	166	55.4	166	55.5	<b>166</b>	<b>55.4</b>
434.zeusmp	72.2	126	<b>72.4</b>	<b>126</b>	72.8	125	72.2	126	<b>72.4</b>	<b>126</b>	72.8	125
435.gromacs	<b>222</b>	<b>32.1</b>	222	32.1	222	32.2	<b>222</b>	<b>32.1</b>	222	32.1	222	32.2
436.cactusADM	<b>28.1</b>	<b>425</b>	28.1	425	27.9	428	<b>28.1</b>	<b>425</b>	28.1	425	27.9	428
437.leslie3d	<b>55.8</b>	<b>168</b>	56.4	167	55.0	171	<b>55.8</b>	<b>168</b>	56.4	167	55.0	171
444.namd	<b>441</b>	<b>18.2</b>	441	18.2	441	18.2	433	18.5	<b>433</b>	<b>18.5</b>	434	18.5
447.dealII	247	46.3	247	46.3	<b>247</b>	<b>46.3</b>	247	46.3	247	46.3	<b>247</b>	<b>46.3</b>
450.soplex	238	35.1	240	34.7	<b>238</b>	<b>35.1</b>	238	35.1	240	34.7	<b>238</b>	<b>35.1</b>
453.povray	156	34.0	154	34.5	<b>155</b>	<b>34.4</b>	130	40.8	131	40.6	<b>131</b>	<b>40.6</b>
454.calculix	<b>262</b>	<b>31.5</b>	262	31.5	262	31.5	255	32.4	255	32.4	<b>255</b>	<b>32.4</b>
459.GemsFDTD	71.1	149	70.9	150	<b>71.1</b>	<b>149</b>	65.8	161	65.6	162	<b>65.6</b>	<b>162</b>
465.tonto	<b>322</b>	<b>30.6</b>	322	30.6	326	30.2	278	35.5	277	35.5	<b>277</b>	<b>35.5</b>
470.lbm	<b>37.2</b>	<b>369</b>	37.0	371	37.4	367	<b>37.2</b>	<b>369</b>	37.0	371	37.4	367
481.wrf	161	69.4	<b>162</b>	<b>69.1</b>	165	67.9	161	69.4	<b>162</b>	<b>69.1</b>	165	67.9
482.sphinx3	329	59.2	<b>331</b>	<b>58.9</b>	331	58.9	329	59.2	<b>331</b>	<b>58.9</b>	331	58.9

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  
 Baseboard Management Controller used to adjust the fan speed to 100%  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on localhost Mon Jul 28 16:15:52 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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CPU2006 license: 3175

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Hardware Availability: Sep-2013

Software Availability: Nov-2013

## Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2620 v2 @ 2.10GHz
 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:      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 Jul 28 08:55

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext3  455G  92G   340G  22% /

```

```

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 = "12"

```

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

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## General Notes (Continued)

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  
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.dealIII: 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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.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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