



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = **49.8**

Huawei CH121 V3 (Intel Xeon E5-2609 v3)

SPECfp\_base2006 = **47.7**

CPU2006 license: 3175

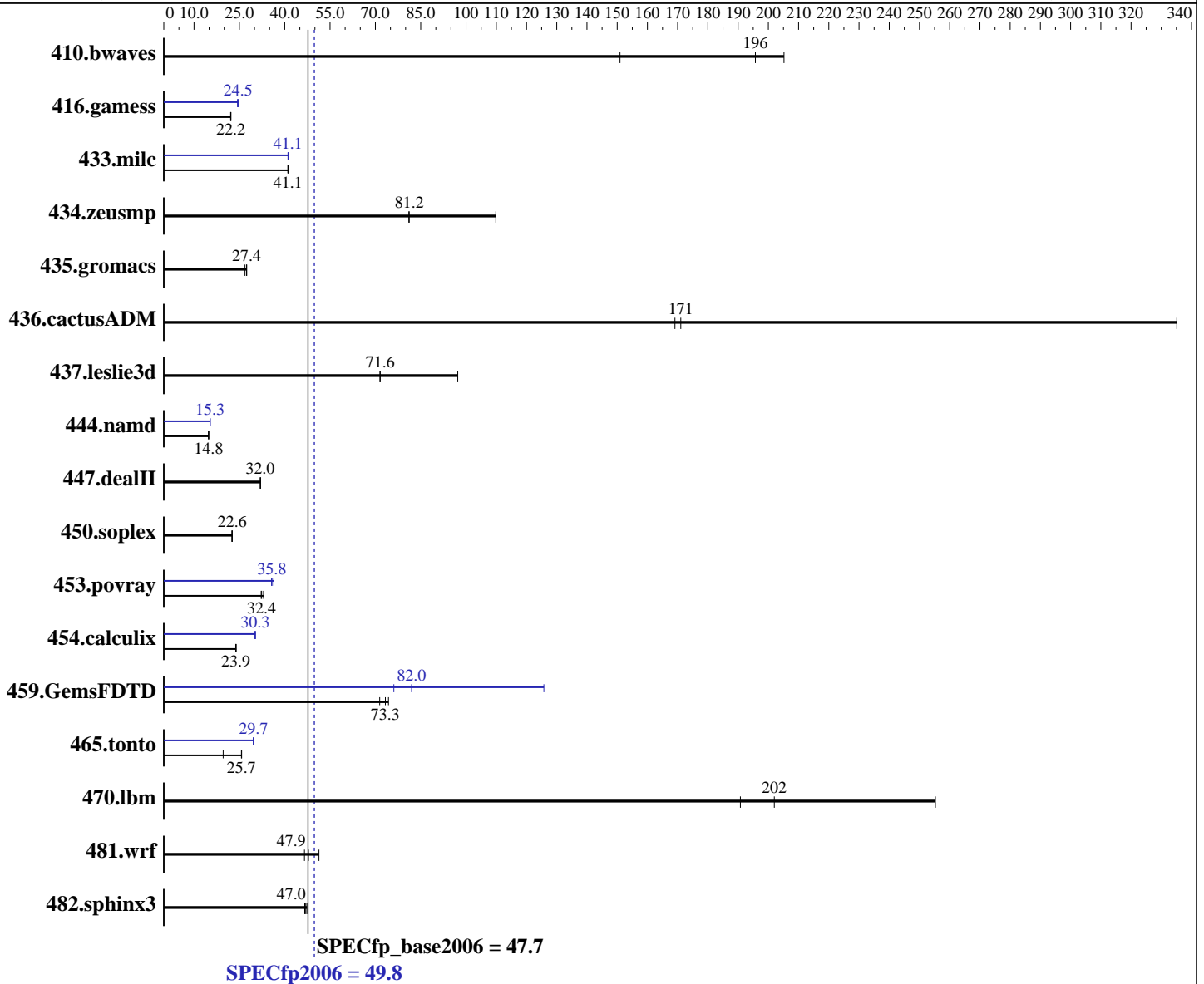
Test sponsor: Huawei

Tested by: Huawei

Test date: Jul-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E5-2609 v3  
 CPU Characteristics:  
 CPU MHz: 1900  
 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)  
 2.6.32-431.el6.x86\_64  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
 Fortran: Version 14.0.0.080 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: 128 GB (16 x 8 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)  
 Disk Subsystem: 1 x 256 GB SATA, SSD  
 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>69.4</b>	<b>196</b>	90.0	151	66.2	205	<b>69.4</b>	<b>196</b>	90.0	151	66.2	205
416.gamess	882	22.2	886	22.1	<b>883</b>	<b>22.2</b>	797	24.6	803	24.4	<b>798</b>	<b>24.5</b>
433.milc	224	41.1	223	41.1	<b>223</b>	<b>41.1</b>	<b>223</b>	<b>41.1</b>	223	41.1	223	41.1
434.zeusmp	112	81.1	82.8	110	<b>112</b>	<b>81.2</b>	112	81.1	82.8	110	<b>112</b>	<b>81.2</b>
435.gromacs	266	26.9	260	27.4	<b>261</b>	<b>27.4</b>	266	26.9	260	27.4	<b>261</b>	<b>27.4</b>
436.cactusADM	35.7	335	<b>69.9</b>	<b>171</b>	70.7	169	35.7	335	<b>69.9</b>	<b>171</b>	70.7	169
437.leslie3d	<b>131</b>	<b>71.6</b>	131	71.5	96.7	97.3	<b>131</b>	<b>71.6</b>	131	71.5	96.7	97.3
444.namd	540	14.8	<b>540</b>	<b>14.8</b>	542	14.8	523	15.3	523	15.3	<b>523</b>	<b>15.3</b>
447.dealII	358	31.9	358	32.0	<b>358</b>	<b>32.0</b>	358	31.9	358	32.0	<b>358</b>	<b>32.0</b>
450.soplex	369	22.6	<b>369</b>	<b>22.6</b>	370	22.5	369	22.6	<b>369</b>	<b>22.6</b>	370	22.5
453.povray	<b>164</b>	<b>32.4</b>	165	32.2	161	33.0	146	36.4	<b>149</b>	<b>35.8</b>	149	35.6
454.calculix	347	23.8	344	24.0	<b>346</b>	<b>23.9</b>	274	30.2	<b>272</b>	<b>30.3</b>	272	30.3
459.GemsFDTD	143	74.3	149	71.4	<b>145</b>	<b>73.3</b>	139	76.1	<b>129</b>	<b>82.0</b>	84.4	126
465.tonto	<b>383</b>	<b>25.7</b>	501	19.6	382	25.8	<b>332</b>	<b>29.7</b>	331	29.7	332	29.6
470.lbm	72.0	191	<b>68.0</b>	<b>202</b>	53.8	255	72.0	191	<b>68.0</b>	<b>202</b>	53.8	255
481.wrf	218	51.3	<b>233</b>	<b>47.9</b>	240	46.5	218	51.3	<b>233</b>	<b>47.9</b>	240	46.5
482.sphinx3	<b>415</b>	<b>47.0</b>	412	47.4	418	46.6	<b>415</b>	<b>47.0</b>	412	47.4	418	46.6

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 Snoop Mode to HS  
 Set Hyper-Threading to Disabled  
 Baseboard Management Controller used to adjust the fan speed to 100%  
 Sysinfo program /spec/config/sysinfo.rev6818  
 \$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191  
 running on xjt Wed Jul 30 05:19:06 2014

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<b>CPU2006 license:</b> 3175	<b>Test date:</b> Jul-2014
<b>Test sponsor:</b> Huawei	<b>Hardware Availability:</b> Sep-2014
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## Platform Notes (Continued)

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 E5-2609 v3 @ 1.90GHz
 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:      131928996 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 xjt 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 30 05:00
```

```
SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  222G  46G  165G  22% /
```

```
Additional information from dmidecode:
BIOS Insyde Corp. 8.09 07/14/2014
Memory:
 8x Micron 18ASF1G72PDZ-2G1A1 8 GB 1600 MHz 1 rank
 8x Micron 18ASF1G72PDZ-2G1A1 8 GB 1600 MHz 2 rank
 8x NO DIMM NO DIMM          3 rank
```

(End of data from sysinfo program)



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## General Notes

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

LD\_LIBRARY\_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

OMP\_NUM\_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## 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



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## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32 -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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## Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xCORE-AVX2(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.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(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: -xCORE-AVX2(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-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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>



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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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