



# SPEC® CFP2006 Result

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## Huawei

SPECfp®2006 = 67.4

Huawei XH620 V2 (Intel Xeon E5-2630L)

SPECfp\_base2006 = 64.6

CPU2006 license: 3175

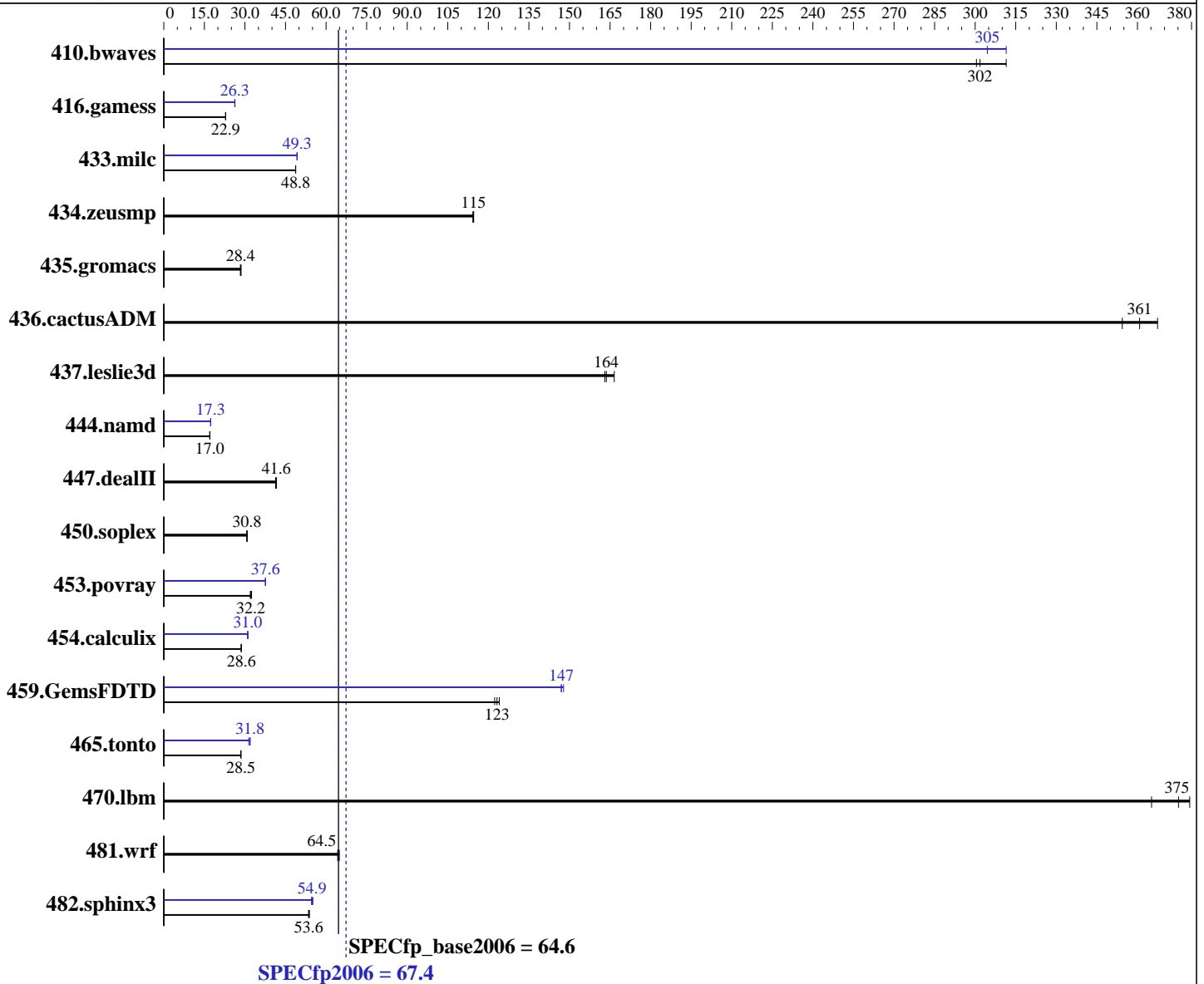
Test date: Oct-2012

Test sponsor: Huawei

Hardware Availability: May-2012

Tested by: Huawei

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2630L  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 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 6.2 (Santiago)  
 2.6.32-220.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: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL7)  
 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	<b>45.0</b>	<b>302</b>	45.2	300	43.6	311	44.6	305	<b>44.6</b>	<b>305</b>	43.6	311
416.gamess	856	22.9	857	22.9	<b>856</b>	<b>22.9</b>	<b>745</b>	<b>26.3</b>	744	26.3	747	26.2
433.milc	<b>188</b>	<b>48.8</b>	188	48.8	188	48.7	186	49.2	<b>186</b>	<b>49.3</b>	186	49.4
434.zeusmp	<b>79.4</b>	<b>115</b>	79.4	115	79.6	114	<b>79.4</b>	<b>115</b>	79.4	115	79.6	114
435.gromacs	250	28.6	252	28.3	<b>251</b>	<b>28.4</b>	250	28.6	252	28.3	<b>251</b>	<b>28.4</b>
436.cactusADM	33.7	354	<b>33.1</b>	<b>361</b>	32.5	367	33.7	354	<b>33.1</b>	<b>361</b>	32.5	367
437.leslie3d	56.4	167	57.6	163	<b>57.4</b>	<b>164</b>	56.4	167	57.6	163	<b>57.4</b>	<b>164</b>
444.namd	<b>471</b>	<b>17.0</b>	471	17.0	471	17.0	463	17.3	<b>463</b>	<b>17.3</b>	463	17.3
447.dealII	<b>275</b>	<b>41.6</b>	277	41.4	275	41.6	<b>275</b>	<b>41.6</b>	277	41.4	275	41.6
450.soplex	272	30.7	270	30.9	<b>271</b>	<b>30.8</b>	272	30.7	270	30.9	<b>271</b>	<b>30.8</b>
453.povray	<b>165</b>	<b>32.2</b>	164	32.5	166	32.0	141	37.6	142	37.5	<b>142</b>	<b>37.6</b>
454.calculix	288	28.6	<b>288</b>	<b>28.6</b>	288	28.7	265	31.1	<b>266</b>	<b>31.0</b>	266	31.0
459.GemsFDTD	86.7	122	85.5	124	<b>86.1</b>	<b>123</b>	72.2	147	71.8	148	<b>72.2</b>	<b>147</b>
465.tonto	345	28.5	346	28.5	<b>345</b>	<b>28.5</b>	308	32.0	313	31.4	<b>309</b>	<b>31.8</b>
470.lbm	37.6	365	<b>36.6</b>	<b>375</b>	36.2	379	37.6	365	<b>36.6</b>	<b>375</b>	36.2	379
481.wrf	174	64.3	172	64.9	<b>173</b>	<b>64.5</b>	174	64.3	172	64.9	<b>173</b>	<b>64.5</b>
482.sphinx3	362	53.8	<b>363</b>	<b>53.6</b>	364	53.5	354	55.1	357	54.6	<b>355</b>	<b>54.9</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"  
 Transparent Huge Pages enabled with:  
 echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
 Select only test related files when installing the operating system

## Platform Notes

BIOS configuration:  
 Intel Hyper-Threading set to Disabled  
 Set Power Efficiency Mode to Performance  
 Sysinfo program /spec/config/sysinfo.rev6800  
 \$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
 running on RH62-rebuild Tue Oct 16 09:38:48 2012

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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 E5-2630L 0 @ 2.00GHz
 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:      132118644 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

From /etc/\*release\* /etc/\*version\*

```
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux RH62-rebuild 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Oct 15 23:52

SPEC is set to: /spec

```
Filesystem      Type      Size Used Avail Use% Mounted on
/dev/sdal        ext4      289G   57G  218G  21% /
```

Additional information from dmidecode:

(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 1x Core i7-860 CPU + 8GB memory using RHEL5.5



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## 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

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



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## 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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

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

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

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## Peak Optimization Flags (Continued)

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-revE.20121120.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-revE.20121120.xml>

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

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