



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Huawei

### SPECfp®\_rate2006 = 1010

### Huawei CH240 (Intel Xeon E5-4620 v2)

### SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

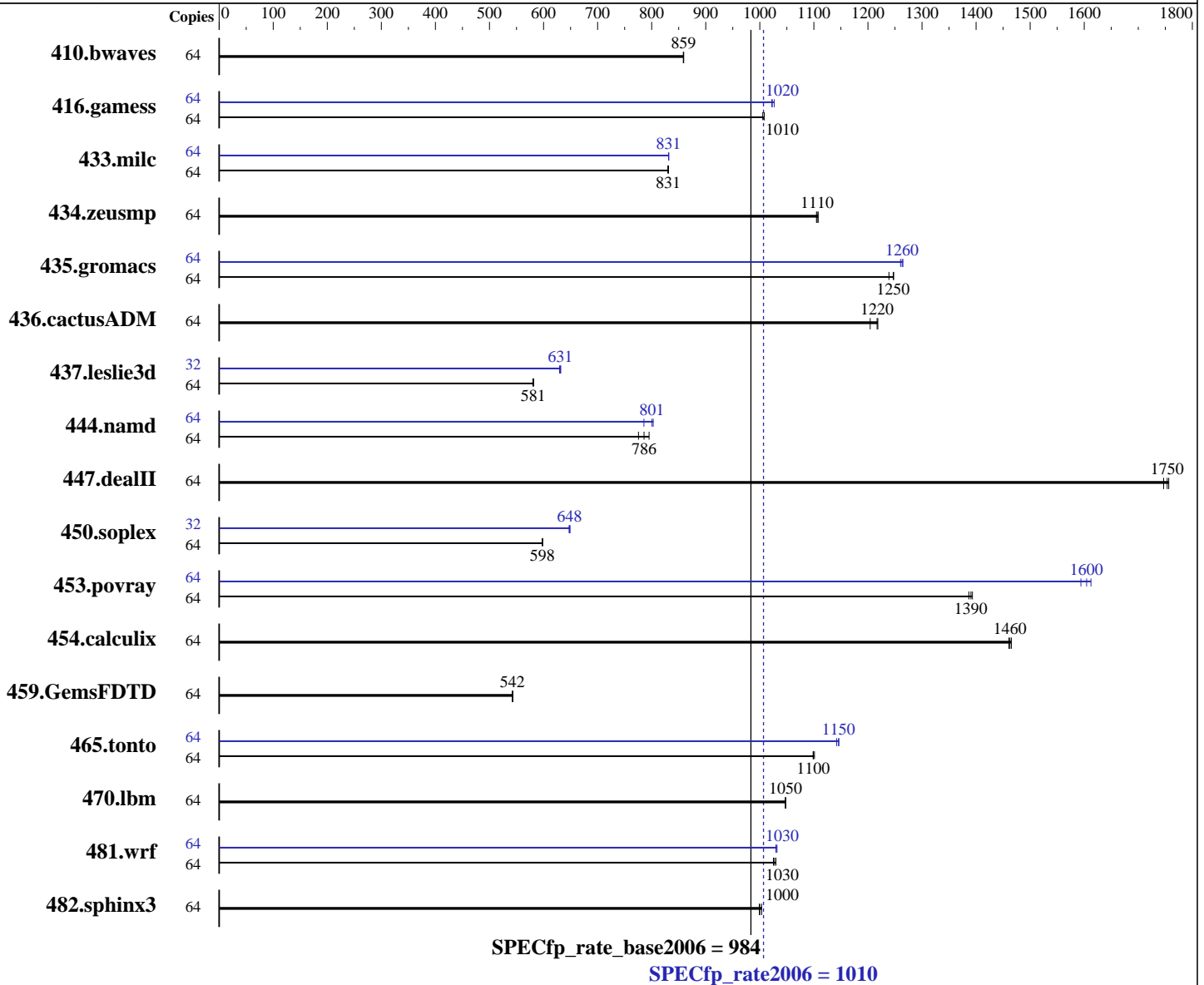
Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013



#### Hardware

CPU Name: Intel Xeon E5-4620 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 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

Continued on next page

#### 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: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Huawei

SPECfp\_rate2006 = 1010

## Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (32 x 8 GB 2Rx8 PC3-12800R-11,ECC)  
 Disk Subsystem: 1 x 300 GB SAS, 7200 RPM  
 Other Hardware: None

System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	1012	859	1013	859	<b>1013</b>	<b>859</b>	64	1012	859	1013	859	<b>1013</b>	<b>859</b>
416.gamess	64	<b>1243</b>	<b>1010</b>	1246	1010	1243	1010	64	1221	1030	<b>1225</b>	<b>1020</b>	1226	1020
433.milc	64	<b>707</b>	<b>831</b>	708	830	707	831	64	707	831	706	832	<b>707</b>	<b>831</b>
434.zeusmp	64	526	1110	<b>527</b>	<b>1110</b>	527	1100	64	526	1110	<b>527</b>	<b>1110</b>	527	1100
435.gromacs	64	369	1240	366	1250	<b>367</b>	<b>1250</b>	64	361	1260	363	1260	<b>362</b>	<b>1260</b>
436.cactusADM	64	<b>628</b>	<b>1220</b>	635	1200	628	1220	64	<b>628</b>	<b>1220</b>	635	1200	628	1220
437.leslie3d	64	1037	580	1034	582	<b>1036</b>	<b>581</b>	32	478	630	476	632	<b>477</b>	<b>631</b>
444.namd	64	<b>653</b>	<b>786</b>	662	776	645	795	64	653	786	639	803	<b>641</b>	<b>801</b>
447.dealII	64	417	1760	419	1750	<b>418</b>	<b>1750</b>	64	417	1760	419	1750	<b>418</b>	<b>1750</b>
450.soplex	64	892	598	<b>892</b>	<b>598</b>	893	598	32	<b>412</b>	<b>648</b>	411	649	412	647
453.povray	64	246	1390	244	1390	<b>245</b>	<b>1390</b>	64	211	1610	214	1590	<b>212</b>	<b>1600</b>
454.calculix	64	<b>361</b>	<b>1460</b>	360	1470	361	1460	64	<b>361</b>	<b>1460</b>	360	1470	361	1460
459.GemsFDTD	64	1250	543	1252	542	<b>1252</b>	<b>542</b>	64	1250	543	1252	542	<b>1252</b>	<b>542</b>
465.tonto	64	572	1100	<b>573</b>	<b>1100</b>	573	1100	64	549	1150	<b>550</b>	<b>1150</b>	551	1140
470.lbm	64	839	1050	840	1050	<b>839</b>	<b>1050</b>	64	839	1050	840	1050	<b>839</b>	<b>1050</b>
481.wrf	64	694	1030	697	1030	<b>696</b>	<b>1030</b>	64	<b>694</b>	<b>1030</b>	693	1030	694	1030
482.sphinx3	64	1243	1000	<b>1247</b>	<b>1000</b>	1248	999	64	1243	1000	<b>1247</b>	<b>1000</b>	1248	999

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

Sysinfo program /spec/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost Sat May 31 05:04:38 2014

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 1010

Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

## 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 E5-4620 v2 @ 2.60GHz
 4 "physical id"s (chips)
 64 "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       : 16
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 : 20480 KB

From /proc/meminfo

```
MemTotal:      264479484 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 May 30 16:46

SPEC is set to: /spec

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2        ext4  245G   82G  151G  36% /
```

Additional information from dmidecode:

BIOS Insyde Corp. OARYV388 04/23/2014

Memory:

```
16x NO DIMM NO DIMM
32x Samsung M393B1G73BH0-CK0 8 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 1010

Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

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  
Filesystem page cache cleared with:  
echo 1 > /proc/sys/vm/drop\_caches  
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.deallI: -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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 1010

Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias  
-opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias  
-opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias  
-opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
459.GemsFDTD: -DSPEC\_CPU\_LP64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 1010

Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test date: May-2014

Test sponsor: Huawei

Hardware Availability: Mar-2014

Tested by: Huawei

Software Availability: Nov-2013

## Peak Portability Flags (Continued)

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

## 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) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -auto-ilp32

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) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(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-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 1010

Huawei CH240 (Intel Xeon E5-4620 v2)

SPECfp\_rate\_base2006 = 984

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2014

Hardware Availability: Mar-2014

Software Availability: Nov-2013

## Peak Optimization Flags (Continued)

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 22:51:48 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 25 June 2014.