



# SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp®\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**

**up policy on [http://spec.org/cpu2006/Docs/runrules.html#rule\\_1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) SPEC CPU run and reporting policy on <https://www.spec.org/osg/policy.html#AppendixC> general**

	Copies
410.bwaves	
416.gamess	
433.milc	
434.zeusmp	
435.gromacs	
436.cactusADM	
437.leslie3d	
444.namd	
447.dealII	
450.soplex	
453.povray	
454.calculix	
459.GemsFDTD	
465.tonto	
471.lbm	
481.wrf	
482.sphinx3	

**Non-Compliant**



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

### Hardware

CPU Name: Intel Xeon E5-2699 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 44 cores, 2 chips, 22 cores/chip, 2 threads/core  
 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  
 L3 Cache: 55 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC 2400T-  
 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.2  
 (El7) (x86\_64)  
 3.10.0-327.el7.x86\_64  
 Compiler: C/C++ version 16.0.0.101 of Intel C++ Studio XE  
 for Linux;  
 Fortran: Version 16.0.0.101 of Intel Fortran  
 Studio XE for Linux  
 Architecture: Parallel No  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

**Non-Compliant**



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = NC

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = NC

CPU2006 license: 3175  
Test sponsor: Huawei  
Tested by: Huawei

Test date: May-2016  
Hardware Availability: Mar-2016  
Software Availability: Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not [http://spec.org/cpu2006/Docs/runrules.html#rule\\_1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) SPEC CPU run up policy on <https://www.spec.org/osg/policy.html#AppendixC> gener

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
416.gamess	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
433.milc	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
434.zeusmp	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
435.gromacs	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
436.cactusADM	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
437.leslie3d	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
444.namd	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
447.dealII	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
450.soplex	88	NC	NC	NC	NC	NC	NC	44	NC	NC	NC	NC	NC	NC		
453.povray	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
454.calculix	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
459.GemsFDTD	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
465.tonto	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
470.lbm	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
481.wrf	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		
482.sphinx3	88	NC	NC	NC	NC	NC	NC	88	NC	NC	NC	NC	NC	NC		

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"



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
[http://spec.org/cpu2006/Docs/runrules.html#rule\\_1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) SPEC CPU run  
<https://www.spec.org/osg/policy.html#AppendixC> gener

## Platform Notes

BIOS configuration:

Set Power Efficiency Mode to Performance

Set Snoop Mode to COD mode

Set Patrol Scrub to Disable

Sysinfo program /spec16/config/sysinfo.rev\_114

\$Rev: 6914 \$ \$Date:: 2014-06-25 # \$ e3fbb86675a285932ceab81e28219e1

running on localhost.localdomain Fri May 27 00:23:21 2016

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 E5-2699 v4 @ 2.20GHz

2 "physical id"s (chips)

88 "processors"

cores, siblings (Caution: Listing these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 22

siblings : 4

physical 0: cores 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28

physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28

cache size : 20460 kB

From /proc/meminfo

MemTotal: 263560548 kB

HugePages\_Total: 0

Hugepagesize: 2048 kB

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

os-release:

NAME="Red Hat Enterprise Linux Server"

VERSION="7.2 (Maipo)"

ID="rhel"

ID\_LIKE="fedora"

VERSION\_ID="7.2"

PRETTY\_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"

ANSI\_COLOR="0;31"

CPE\_NAME="cpe:/o:redhat:enterprise\_linux:7.2:GA:server"

redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

## Platform Notes (Continued)

```

system-release-cpe: cpe:/o:redhat:enterprise_linux:7.2:na:server

uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29
EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 27 05:56

SPEC is set to: /spec16
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       xfs   440G  11G  429G   3% /
Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program
reads system data which is "intended to allow hardware to be accurately
determined", but the information may not be met, as there are frequent changes to
hardware, firmware, and the "SMBIOS" standard.

BIOS Insyde Corp. 8.08 01/29/2016
Memory:
8x NO DIMM NO DIMM 3 rank
8x Samsung M393A2G40B1-CRC 16 GB 1 rank 2400 MHz
8x Samsung M393A2G40EB-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

```

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/spec16/libs/32:/spec16/libs/64:/spec16/sh"

```

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
memory using RedHat EL 7.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/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>

```



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

## 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.tomcat: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wt: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
482.sphinx3: -DSPEC\_CPU\_LP64

## Base Optimization Flags

C benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xCORE-AVX2 -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 -x32 -L/opt/intel/compilers\_and\_libraries\_2016/linux/compiler/lib/ia32\_lin

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

Continued on next page





# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not [http://spec.org/cpu2006/Docs/runrules.html#rule\\_1.3.2](http://spec.org/cpu2006/Docs/runrules.html#rule_1.3.2) SPEC CPU run up policy on <https://www.spec.org/osg/policy.html#AppendixC> gener

## Peak Portability Flags (Continued)

450.soplex: -D\_FILE\_OFFSET\_BITS=64  
 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\_LINUX -DSPEC\_CPU\_LINUX  
 482.sphinx3: -DSPEC\_CPU\_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.cgalII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
 -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
 -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
 -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

Continued on next page





# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = **NC**

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = **NC**

CPU2006 license: 3175

Test date: May-2016

Test sponsor: Huawei

Hardware Availability: Mar-2016

Tested by: Huawei

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

## Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll14 -auto  
-inline-alloc -opt-alloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -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: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-BDW-V1.0.xml>



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = NC

Huawei RH2288H V3 (Intel Xeon E5-2699 v4)

SPECfp\_rate\_base2006 = NC

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: May-2016

Hardware Availability: Mar-2016

Software Availability: Mar-2016

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the memory was not**  
a href="http://spec.org/cpu2006/Docs/runrules.html#rule\_1.3.2">SPEC CPU run  
up policy on <a href="https://www.spec.org/osg/policy.html#AppendixC">gener

**Non-Compliant**

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 Fri Oct 21 16:28:32 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 14 June 2016.