



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Huawei

SPECfp<sup>®</sup>\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

CPU2006 license: 3175

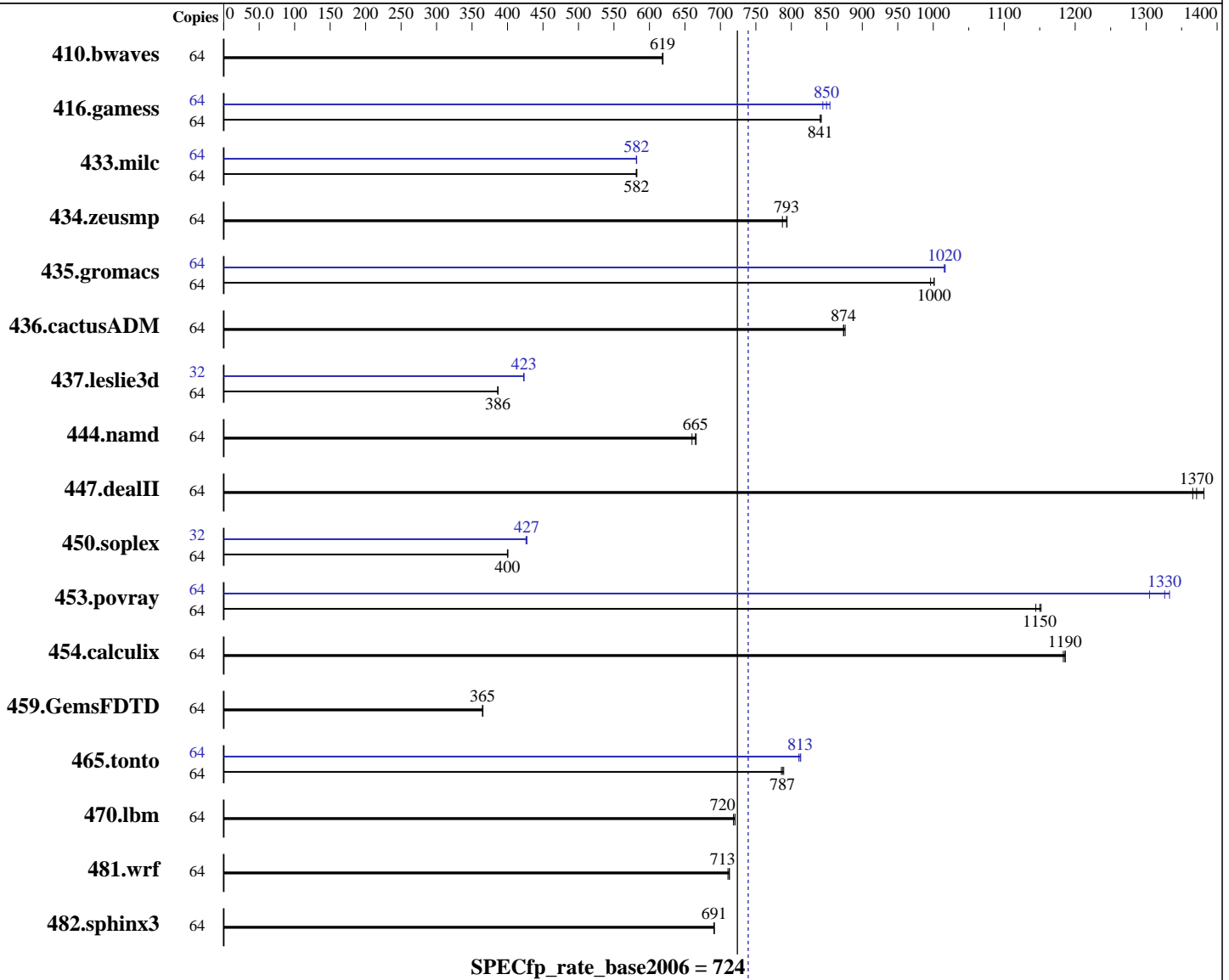
Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013



### Hardware

CPU Name: Intel Xeon E7-4820 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz  
 CPU MHz: 2000  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 chips  
 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 = **739**

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = **724**

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013

L3 Cache: 16 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)  
 Disk Subsystem: 2 x 600 GB SAS, 10K 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	1405	619	1407	618	<b>1406</b>	<b>619</b>	64	1405	619	1407	618	<b>1406</b>	<b>619</b>
416.gamess	64	1491	841	1488	842	<b>1490</b>	<b>841</b>	64	1467	854	<b>1475</b>	<b>850</b>	1484	844
433.milc	64	1011	581	1009	582	<b>1009</b>	<b>582</b>	64	1009	582	1010	582	<b>1010</b>	<b>582</b>
434.zeusmp	64	740	787	<b>734</b>	<b>793</b>	734	794	64	740	787	<b>734</b>	<b>793</b>	734	794
435.gromacs	64	456	1000	459	996	<b>456</b>	<b>1000</b>	64	450	1020	449	1020	<b>450</b>	<b>1020</b>
436.cactusADM	64	873	876	875	874	<b>875</b>	<b>874</b>	64	873	876	875	874	<b>875</b>	<b>874</b>
437.leslie3d	64	<b>1557</b>	<b>386</b>	1555	387	1558	386	32	<b>711</b>	<b>423</b>	711	423	712	423
444.namd	64	771	666	<b>772</b>	<b>665</b>	778	660	64	771	666	<b>772</b>	<b>665</b>	778	660
447.dealII	64	530	1380	536	1370	<b>534</b>	<b>1370</b>	64	530	1380	536	1370	<b>534</b>	<b>1370</b>
450.soplex	64	1333	400	1335	400	<b>1334</b>	<b>400</b>	32	625	427	627	426	<b>625</b>	<b>427</b>
453.povray	64	297	1140	296	1150	<b>296</b>	<b>1150</b>	64	<b>257</b>	<b>1330</b>	261	1300	255	1330
454.calculix	64	445	1190	446	1180	<b>445</b>	<b>1190</b>	64	445	1190	446	1180	<b>445</b>	<b>1190</b>
459.GemsFDTD	64	<b>1860</b>	<b>365</b>	1862	365	1858	365	64	<b>1860</b>	<b>365</b>	1862	365	1858	365
465.tonto	64	801	786	<b>800</b>	<b>787</b>	798	789	64	<b>775</b>	<b>813</b>	774	813	777	811
470.lbm	64	<b>1221</b>	<b>720</b>	1220	721	1224	718	64	<b>1221</b>	<b>720</b>	1220	721	1224	718
481.wrf	64	1003	713	<b>1003</b>	<b>713</b>	1006	711	64	1003	713	<b>1003</b>	<b>713</b>	1006	711
482.sphinx3	64	<b>1805</b>	<b>691</b>	1805	691	1804	691	64	<b>1805</b>	<b>691</b>	1805	691	1804	691

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 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013

## Platform Notes

BIOS configuration:

Set Power Efficiency Mode to Performance

Set Lock\_step 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 RH5885V3 Tue Sep 9 11:16:23 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>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E7-4820 v2 @ 2.00GHz

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 : 16384 KB

From /proc/meminfo

MemTotal: 264356460 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 RH5885V3 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 Sep 9 11:09

SPEC is set to: /spec

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	ext4	385G	125G	241G	35%	/spec

Additional information from dmidecode:

BIOS American Megatrends Inc. BL1SV395 07/25/2014

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013

## Platform Notes (Continued)

Memory:

16x 16 GB

14x Hynix HMT42GR7AFR4C-PB 16 GB 1066 MHz 2 rank

2x Hynix HMT42GR7MFR4C-PB 16 GB 1066 MHz 2 rank

32x NO DIMM NO DIMM

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should have two lines reading as:

14x Hynix HMT42GR7AFR4C-PB 16 GB 1066 MHz 2 rank

2x Hynix HMT42GR7MFR4C-PB 16 GB 1066 MHz 2 rank

## 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

Continued on next page

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/

Page 4



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

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

Test date: Sep-2014  
Hardware Availability: Feb-2014  
Software Availability: Nov-2013

## Base Portability Flags (Continued)

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 -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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013

## 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
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: basepeak = yes

447.dealII: 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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

SPECfp\_rate2006 = 739

Huawei RH5885 V3 (Intel Xeon E7-4820 v2)

SPECfp\_rate\_base2006 = 724

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Feb-2014

Software Availability: Nov-2013

## 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-

434.zeusmp: basepeak = yes

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

459.GemsFDTD: basepeak = yes

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: 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-revC.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-revC.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 Tue Oct 21 15:48:12 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 21 October 2014.