SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

$SPECfp^{®}\_rate2006 = \quad 588$

$SPECfp\_rate\_base2006 = \quad 574$

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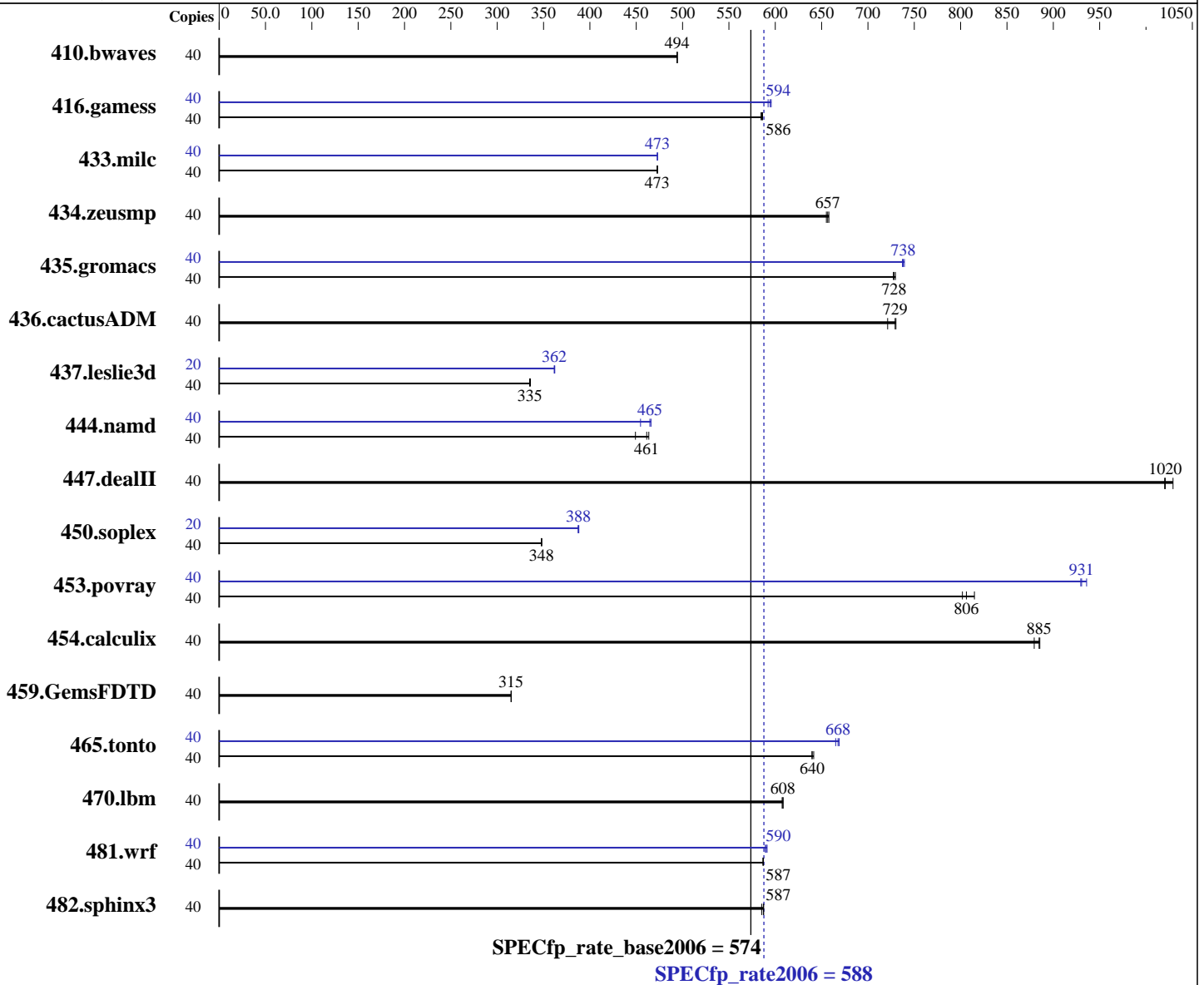**Test sponsor:** Huawei
Tested by: Huawei

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

Benchmark	Copies	Result
410.bwaves	40	494
416.gamess	40	594
416.gamess	40	586
433.milc	40	473
433.milc	40	473
434.zeusmp	40	657
435.gromacs	40	738
435.gromacs	40	728
436.cactusADM	40	729
437.leslie3d	20	362
437.leslie3d	40	335
444.namd	40	465
444.namd	40	461
447.dealII	40	1020
450.soplex	20	388
450.soplex	40	348
453.povray	40	931
453.povray	40	806
454.calculix	40	885
459.GemsFDTD	40	315
465.tonto	40	668
465.tonto	40	640
470.lbm	40	608
481.wrf	40	590
481.wrf	40	587
482.sphinx3	40	587

SPECfp_rate_base2006 = 574
SPECfp_rate2006 = 588

Hardware

CPU Name:	Intel Xeon E5-2660 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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

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

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

CPU2006 license: 3175	**Test date:** Oct-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2013
Tested by: Huawei	**Software Availability:** Nov-2013

L3 Cache: 25 MB I+D on chip per chip	System State: Run level 3 (multi-user)
Other Cache: None	Base Pointers: 32/64-bit
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)	Peak Pointers: 32/64-bit
Disk Subsystem: 1 x 300 GB SAS, 10K RPM	Other Software: None
Other Hardware: None	

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	40	**1100**	**494**	1100	494	1100	494	40	**1100**	**494**	1100	494	1100	494
416.gamess	40	1340	585	1336	586	**1338**	**586**	40	**1317**	**594**	1315	596	1322	592
433.milc	40	776	473	**777**	**473**	777	473	40	777	473	776	473	**777**	**473**
434.zeusmp	40	**554**	**657**	556	655	553	658	40	**554**	**657**	556	655	553	658
435.gromacs	40	**392**	**728**	393	727	391	730	40	**387**	**738**	387	737	386	739
436.cactusADM	40	663	721	**655**	**729**	655	730	40	663	721	**655**	**729**	655	730
437.leslie3d	40	**1122**	**335**	1122	335	1120	336	20	519	362	**520**	**362**	520	362
444.namd	40	692	464	714	449	**695**	**461**	40	689	466	**690**	**465**	706	455
447.dealII	40	**448**	**1020**	445	1030	449	1020	40	**448**	**1020**	445	1030	449	1020
450.soplex	40	958	348	**959**	**348**	960	348	20	**430**	**388**	431	387	430	388
453.povray	40	**264**	**806**	265	802	261	815	40	229	930	**229**	**931**	227	936
454.calculix	40	373	885	**373**	**885**	375	879	40	373	885	**373**	**885**	375	879
459.GemsFDTD	40	**1347**	**315**	1347	315	1347	315	40	**1347**	**315**	1347	315	1347	315
465.tonto	40	615	640	**615**	**640**	614	641	40	592	665	**589**	**668**	588	669
470.lbm	40	903	608	905	607	**904**	**608**	40	903	608	905	607	**904**	**608**
481.wrf	40	762	587	761	587	**761**	**587**	40	**757**	**590**	758	589	756	591
482.sphinx3	40	**1328**	**587**	1332	585	1327	588	40	**1328**	**587**	1332	585	1327	588

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 /spec14/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu Oct 9 08:16:53 2014

Continued on next page

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

$SPECfp_rate2006 = $ 588

$SPECfp_rate_base2006 = $ 574

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

Test date: Oct-2014
Hardware Availability: Sep-2013
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 E5-2660 v2 @ 2.20GHz
      2 "physical id"s (chips)
      40 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
   cache size : 25600 KB

From /proc/meminfo
   MemTotal:       264478184 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.localdomain 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 Oct 8 08:47

SPEC is set to: /spec14
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       ext4  265G   14G  238G   6% /

Additional information from dmidecode:
  BIOS Insyde Corp. RMIBV629 05/12/2014
  Memory:
   16x Micron 36JSF2G72PZ-1G9E1 16 GB 1866 MHz 2 rank
   8x NO DIMM NO DIMM

(End of data from sysinfo program)
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

$SPECfp\_rate2006 =$ 588

$SPECfp\_rate\_base2006 =$ 574

CPU2006 license: 3175	**Test date:** Oct-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2013
Tested by: Huawei	**Software Availability:** Nov-2013

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec14/libs/32:/spec14/libs/64:/spec14/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.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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

$SPECfp\_rate2006 =$ 588

$SPECfp\_rate\_base2006 =$ 574

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

Test date: Oct-2014
Hardware Availability: Sep-2013
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
```

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

SPECfp_rate2006 =   588

SPECfp_rate_base2006 =   574

CPU2006 license: 3175

Test sponsor: Huawei

Tested by: Huawei

Test date: Oct-2014

Hardware Availability: Sep-2013

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.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

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

Huawei

Huawei BH622 V2 (Intel Xeon E5-2660 v2)

SPECfp_rate2006 =   588

SPECfp_rate_base2006 =   574

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

Test date: Oct-2014
Hardware Availability: Sep-2013
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.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Nov 6 13:47:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 November 2014.