SPEC® CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

$SPECfp^{®}\_rate2006 = \quad 732$

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

$SPECfp\_rate\_base2006 = \quad 712$

CPU2006 license: 3175	**Test date:** Jan-2015
Test sponsor: Huawei	**Hardware Availability:** Sep-2014
Tested by: Huawei	**Software Availability:** Nov-2013

Results graph (Copies):
- **410.bwaves** 40 — 599
- **416.gamess** 40 — 821 / 40 — 783
- **433.milc** 40 — 575 / 40 — 575
- **434.zeusmp** 40 — 825
- **435.gromacs** 40 — 938 / 40 — 907
- **436.cactusADM** 40 — 976
- **437.leslie3d** 20 — 448 / 40 — 418
- **444.namd** 40 — 604 / 40 — 595
- **447.dealII** 40 — 1170
- **450.soplex** 20 — 466 / 40 — 409
- **453.povray** 40 — 1180 / 40 — 1040
- **454.calculix** 40 — 1060
- **459.GemsFDTD** 40 — 393
- **465.tonto** 40 — 825 / 40 — 789
- **470.lbm** 40 — 782
- **481.wrf** 40 — 720 / 40 — 717
- **482.sphinx3** 40 — 695
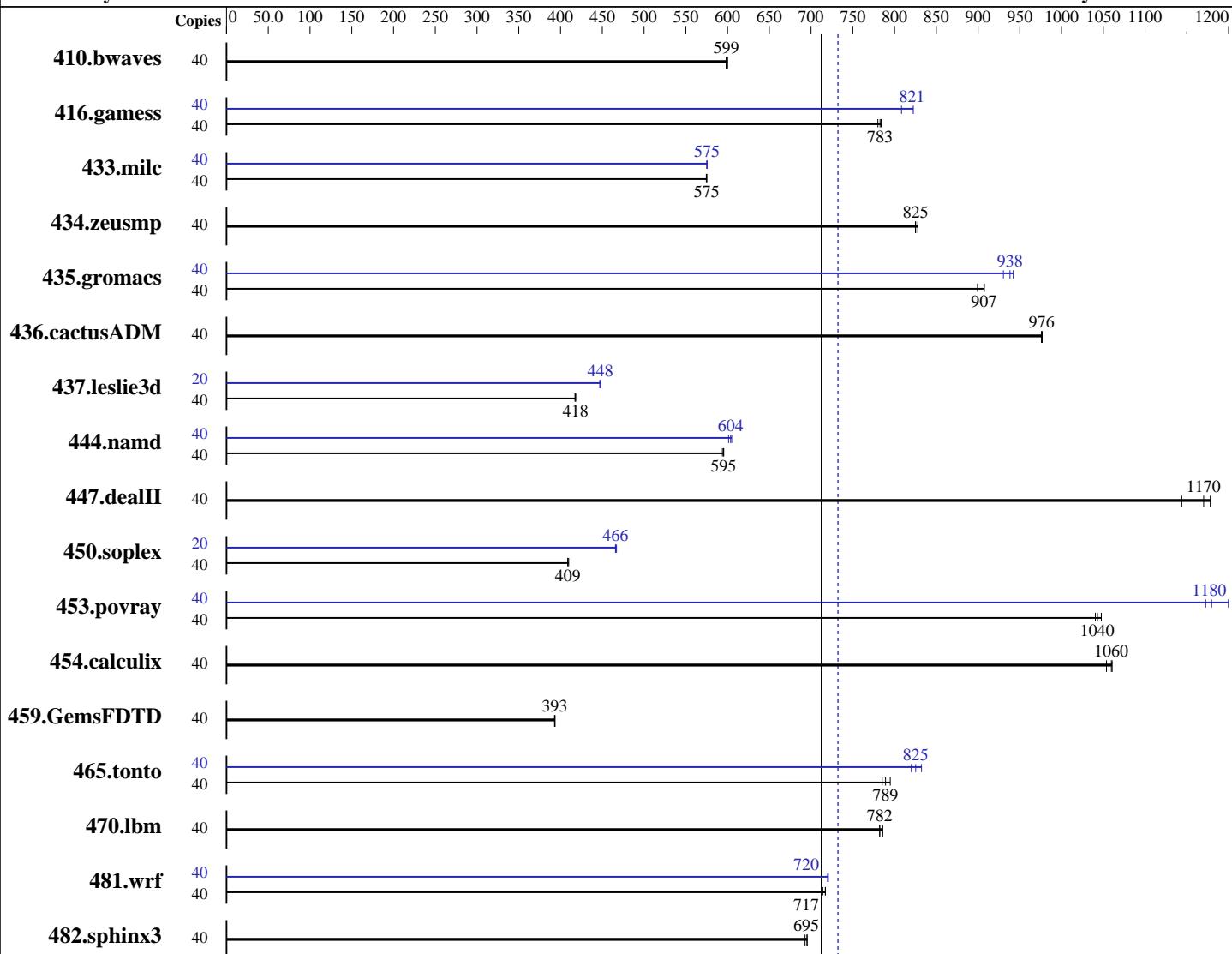
SPECfp_rate_base2006 = 712

SPECfp_rate2006 = 732

Hardware

CPU Name:	Intel Xeon E5-2660 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2600
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 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 =	732
SPECfp_rate_base2006 =	**712**

CPU2006 license: 3175		**Test date:**	Jan-2015
Test sponsor: Huawei		**Hardware Availability:**	Sep-2014
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 PC4-2133P-R)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 500 GB SATA, 7200 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	906	600	908	598	**908**	**599**	40	906	600	908	598	**908**	**599**
416.gamess	40	999	784	1004	780	**1001**	**783**	40	952	823	**954**	**821**	969	808
433.milc	40	639	575	**639**	**575**	638	575	40	638	575	**638**	**575**	638	575
434.zeusmp	40	440	828	**441**	**825**	441	825	40	440	828	**441**	**825**	441	825
435.gromacs	40	315	908	**315**	**907**	318	899	40	307	930	**304**	**938**	303	942
436.cactusADM	40	489	977	490	976	**490**	**976**	40	489	977	490	976	**490**	**976**
437.leslie3d	40	**900**	**418**	899	418	901	417	20	421	447	420	448	**420**	**448**
444.namd	40	539	595	540	594	**539**	**595**	40	**531**	**604**	534	601	530	605
447.dealII	40	388	1180	**391**	**1170**	400	1140	40	388	1180	**391**	**1170**	400	1140
450.soplex	40	816	409	814	410	**816**	**409**	20	357	467	**358**	**466**	358	466
453.povray	40	203	1050	205	1040	**204**	**1040**	40	177	1200	**180**	**1180**	181	1170
454.calculix	40	**311**	**1060**	311	1060	313	1050	40	**311**	**1060**	311	1060	313	1050
459.GemsFDTD	40	1080	393	**1080**	**393**	1079	393	40	1080	393	**1080**	**393**	1079	393
465.tonto	40	**499**	**789**	501	785	495	795	40	473	832	**477**	**825**	480	820
470.lbm	40	703	782	**703**	**782**	699	786	40	703	782	**703**	**782**	699	786
481.wrf	40	626	714	**623**	**717**	623	717	40	620	721	**620**	**720**	621	720
482.sphinx3	40	1121	695	1125	693	**1122**	**695**	40	1121	695	1125	693	**1122**	**695**

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

BIOS configuration:
Set Power Efficiency Mode to Custom
Set Snoop Mode to COD

Continued on next page

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 =   732

SPECfp_rate_base2006 =   712

Platform Notes (Continued)

```
Set Patrol Scrub to Disable
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 localhost.localdomain Thu Jan  8 19:16:09 2015

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 v3 @ 2.60GHz
      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 : 12800 KB

From /proc/meminfo
   MemTotal:       264273708 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 Jan 7 21:23

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda1       ext4  268G   88G  167G  35% /

Additional information from dmidecode:
  BIOS Insyde Corp. 1.13 08/12/2014
  Memory:
   8x NO DIMM NO DIMM      3 rank
   8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
   8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 =   732

SPECfp_rate_base2006 =   712

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

Platform Notes (Continued)

```
(End of data from sysinfo program)
```

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>
 The Huawei CH121 V3 and Huawei CH222 V3
 are electronically equivalent.
 The results have been measured on a Huawei CH121 V3 model
```

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
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 =   732

SPECfp_rate_base2006 =   712

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

Base Portability Flags (Continued)

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

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 -m32
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc    -m64 ifort -m64
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 = 732

SPECfp_rate_base2006 = 712

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

Test date: Jan-2015
Hardware Availability: Sep-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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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
```

Continued on next page

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 =   732

SPECfp_rate_base2006 =   712

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

Peak Optimization Flags (Continued)

Fortran benchmarks:

> 410.bwaves: basepeak = yes

> 416.gamess: `-xCORE-AVX2`(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch`

> 459.GemsFDTD: basepeak = yes

>   465.tonto: `-xCORE-AVX2`(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: `-xCORE-AVX2`(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: `-xCORE-AVX2 -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-HASWELL-V1.2.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-HASWELL-V1.2.xml

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei CH222 V3 (Intel Xeon E5-2660 v3)

SPECfp_rate2006 = 732

SPECfp_rate_base2006 = 712

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

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 Tue Jan 27 13:30:34 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 January 2015.