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

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

$SPECfp^{®}2006 =$ 64.4
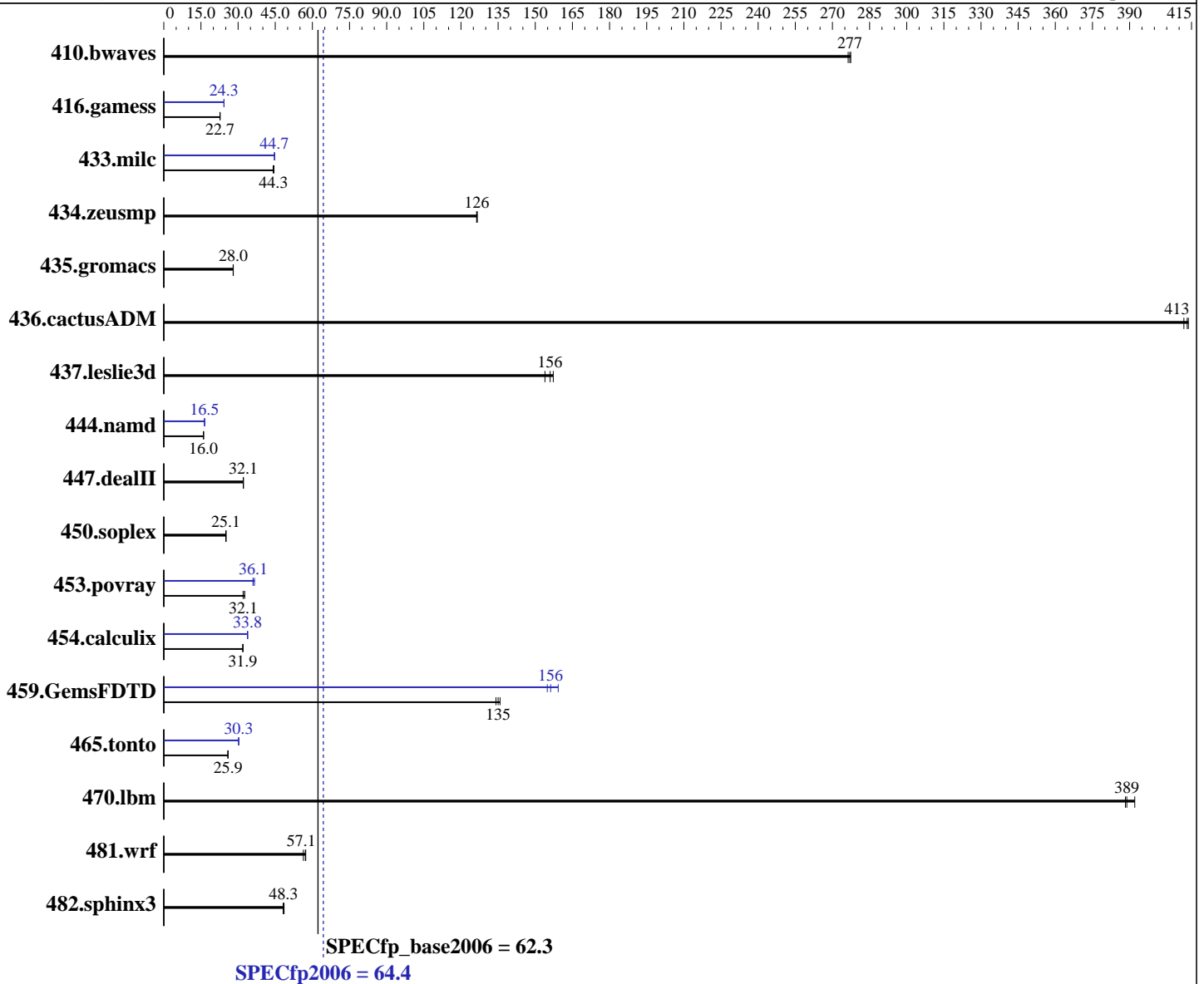
$SPECfp\_base2006 =$ 62.3

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Benchmark	Result
410.bwaves	277
416.gamess	24.3 / 22.7
433.milc	44.7 / 44.3
434.zeusmp	126
435.gromacs	28.0
436.cactusADM	413
437.leslie3d	156
444.namd	16.5 / 16.0
447.dealII	32.1
450.soplex	25.1
453.povray	36.1 / 32.1
454.calculix	33.8 / 31.9
459.GemsFDTD	156 / 135
465.tonto	30.3 / 25.9
470.lbm	389
481.wrf	57.1
482.sphinx3	48.3

SPECfp_base2006 = 62.3
SPECfp2006 = 64.4

Hardware

CPU Name: Intel Xeon E5-2609 v3
CPU Characteristics:
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
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 7.0 (Maipo)
3.10.0-123.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

SPECfp2006 =	64.4
SPECfp_base2006 =	62.3

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

L3 Cache:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
Other Hardware:	None

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

Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	49.0	277	49.2	276	**49.1**	**277**	49.0	277	49.2	276	**49.1**	**277**
416.gamess	863	22.7	**862**	**22.7**	862	22.7	**805**	**24.3**	805	24.3	806	24.3
433.milc	206	44.5	208	44.2	**207**	**44.3**	206	44.7	205	44.8	**205**	**44.7**
434.zeusmp	71.9	127	72.0	126	**72.0**	**126**	71.9	127	72.0	126	**72.0**	**126**
435.gromacs	**255**	**28.0**	255	28.0	254	28.1	**255**	**28.0**	255	28.0	254	28.1
436.cactusADM	**28.9**	**413**	28.9	414	29.0	412	**28.9**	**413**	28.9	414	29.0	412
437.leslie3d	61.1	154	59.8	157	**60.3**	**156**	61.1	154	59.8	157	**60.3**	**156**
444.namd	500	16.0	500	16.0	**500**	**16.0**	487	16.5	487	16.5	**487**	**16.5**
447.dealII	356	32.1	357	32.1	**356**	**32.1**	356	32.1	357	32.1	**356**	**32.1**
450.soplex	**332**	**25.1**	332	25.1	333	25.0	**332**	**25.1**	332	25.1	333	25.0
453.povray	**166**	**32.1**	163	32.7	166	32.0	148	36.0	**147**	**36.1**	145	36.6
454.calculix	258	32.0	259	31.9	**258**	**31.9**	244	33.9	**244**	**33.8**	244	33.8
459.GemsFDTD	79.1	134	**78.6**	**135**	78.1	136	**67.9**	**156**	68.5	155	66.6	159
465.tonto	379	26.0	**380**	**25.9**	380	25.9	326	30.2	325	30.3	**325**	**30.3**
470.lbm	35.0	392	35.4	388	**35.3**	**389**	35.0	392	35.4	388	**35.3**	**389**
481.wrf	195	57.3	**195**	**57.1**	198	56.3	195	57.3	**195**	**57.1**	198	56.3
482.sphinx3	404	48.2	**403**	**48.3**	401	48.6	404	48.2	**403**	**48.3**	401	48.6

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

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 HS mode
Set Patrol Scrub to Disable
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Thu May 14 11:10:44 2015

This section contains SUT (System Under Test) info as seen by
```

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Platform Notes (Continued)

```
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 E5-2609 v3 @ 1.90GHz
      2 "physical id"s (chips)
      12 "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 : 6
      siblings  : 6
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
   cache size : 15360 KB

From /proc/meminfo
   MemTotal:       263579840 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.0 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.0"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
   EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 14 11:10

SPEC is set to: /spec15
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda1      ext4  458G   11G  424G   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 intent may not be met, as there are frequent changes to
   hardware, firmware, and the "DMTF SMBIOS" standard.

   BIOS Insyde Corp. 1.36 04/09/2015
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

$SPECfp2006 = 64.4$

$SPECfp\_base2006 = 62.3$

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Platform Notes (Continued)

```
     Memory:
       8x Micron 36ASF2G72PZ-2G1A2 16 GB 1 rank 2133 MHz, configured at 1600 MHz
       8x Micron 36ASF2G72PZ-2G1A2 16 GB 2 rank 2133 MHz, configured at 1600 MHz

     (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"
OMP_NUM_THREADS = "12"

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 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
```

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

$SPECfp2006 =$ 64.4

$SPECfp\_base2006 =$ 62.3

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

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 -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias
```

Peak Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

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

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

Peak Portability Flags

```
Same as Base Portability Flags
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

$SPECfp2006 = $ 64.4

$SPECfp_base2006 = $ 62.3

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

Test date: May-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

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) -prof-use(pass 2)
>>   -auto-ilp32 -ansi-alias

>>   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) -prof-use(pass 2)
>>   -fno-alias -auto-ilp32

>>   447.dealII: basepeak = yes

>>   450.soplex: basepeak = yes

>>   453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
>>   -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
>>   -ansi-alias

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: basepeak = yes

>>   459.GemsFDTD: -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 -opt-prefetch -parallel

>>   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)
>>   -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

>>   435.gromacs: basepeak = yes

>>   436.cactusADM: basepeak = yes

Huawei

Huawei RH2288 V3 (Intel Xeon E5-2609 v3)

$SPECfp2006 =$ 64.4

$SPECfp\_base2006 =$ 62.3

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

Peak Optimization Flags (Continued)

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml

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 Wed Jun 17 10:47:57 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 16 June 2015.