SPEC® CFP2006 Result

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Huawei

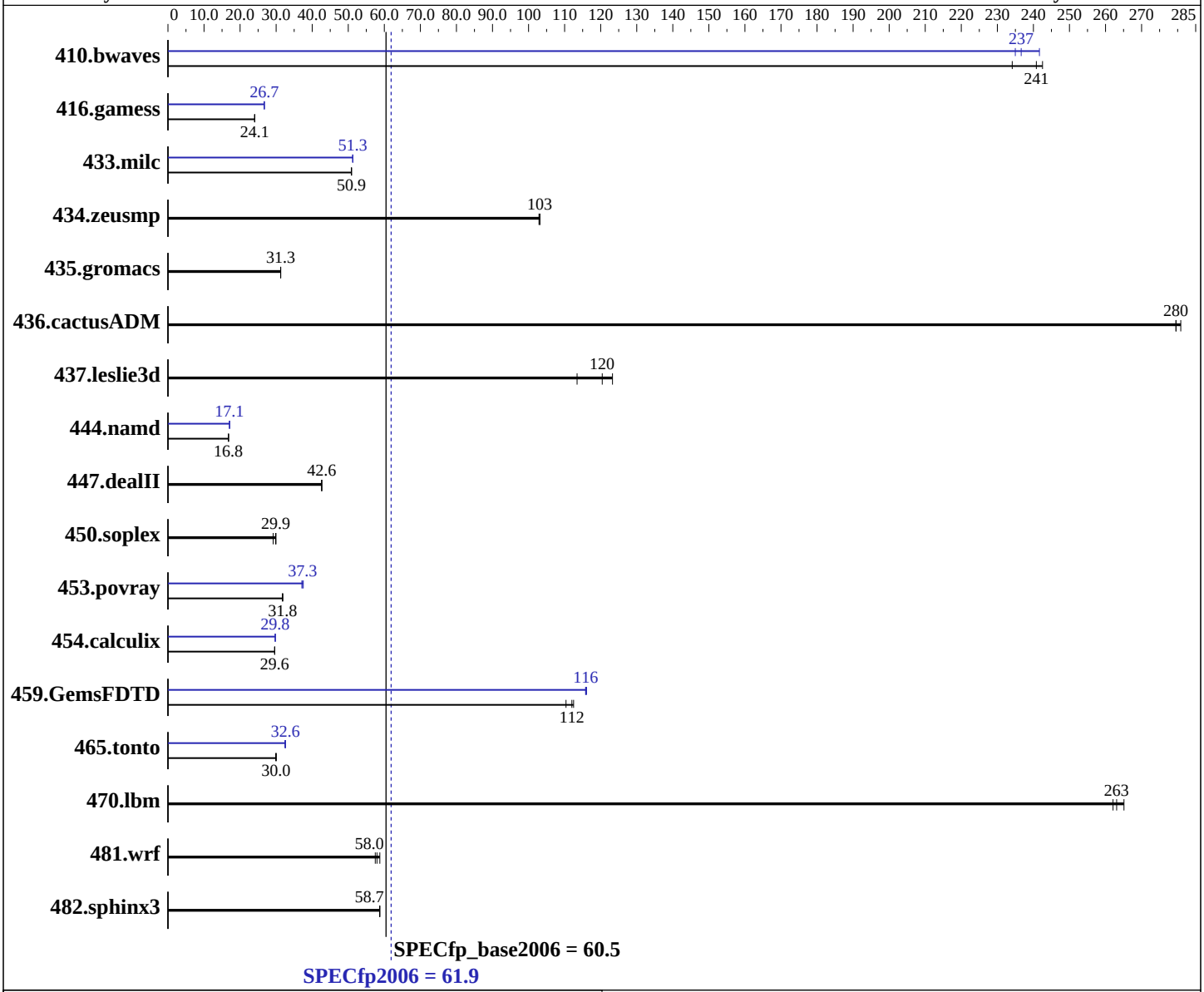
Huawei RH2285H v2 (Intel Xeon E5-2407 v2)

SPECfp®2006 = 61.9

SPECfp_base2006 = 60.5

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

Test date: May-2014
Hardware Availability: Mar-2014
Software Availability: Nov-2013



Hardware

CPU Name:	Intel Xeon E5-2407 v2
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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 6.5 (Santiago) 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11,ECC)
Disk Subsystem: 1 x 300 GB SAS, 7200RPM
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						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	58.0	234	**56.4**	**241**	56.0	243	**57.4**	**237**	57.8	235	56.2	242
416.gamess	814	24.1	815	24.0	**814**	**24.1**	733	26.7	733	26.7	**733**	**26.7**
433.milc	180	50.9	**180**	**50.9**	180	50.9	179	51.3	179	51.2	**179**	**51.3**
434.zeusmp	**88.2**	**103**	88.2	103	88.4	103	**88.2**	**103**	88.2	103	88.4	103
435.gromacs	228	31.3	229	31.2	**228**	**31.3**	228	31.3	229	31.2	**228**	**31.3**
436.cactusADM	**42.7**	**280**	42.5	281	42.7	280	**42.7**	**280**	42.5	281	42.7	280
437.leslie3d	76.3	123	**78.1**	**120**	82.9	113	76.3	123	**78.1**	**120**	82.9	113
444.namd	478	16.8	478	16.8	**478**	**16.8**	470	17.1	**470**	**17.1**	470	17.1
447.dealII	268	42.6	268	42.6	**268**	**42.6**	268	42.6	268	42.6	**268**	**42.6**
450.soplex	286	29.2	**279**	**29.9**	278	30.0	286	29.2	**279**	**29.9**	278	30.0
453.povray	168	31.7	**167**	**31.8**	167	31.9	142	37.5	**143**	**37.3**	143	37.1
454.calculix	279	29.6	279	29.6	**279**	**29.6**	277	29.8	278	29.7	**277**	**29.8**
459.GemsFDTD	**94.7**	**112**	94.3	112	96.1	110	**91.6**	**116**	91.6	116	91.4	116
465.tonto	**328**	**30.0**	329	29.9	328	30.0	302	32.6	**302**	**32.6**	303	32.4
470.lbm	51.8	265	**52.2**	**263**	52.4	262	51.8	265	**52.2**	**263**	52.4	262
481.wrf	190	58.8	**193**	**58.0**	194	57.5	190	58.8	**193**	**58.0**	194	57.5
482.sphinx3	**332**	**58.7**	332	58.8	332	58.7	**332**	**58.7**	332	58.8	332	58.7

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

```
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Sat May 31 23:45:30 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 E5-2407 v2 @ 2.40GHz
```

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Platform Notes (Continued)

```
        2 "physical id"s (chips)
        8 "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 : 4
        siblings  : 4
        physical 0: cores 0 1 2 3
        physical 1: cores 0 1 2 3
     cache size : 10240 KB

  From /proc/meminfo
     MemTotal:       99010156 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 May 30 11:40

  SPEC is set to: /spec
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda2      ext4  540G  115G  398G  23% /

  Additional information from dmidecode:
    Memory:
     8x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank
     3x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank
     1x Samsung M393B1K70DH0-YH9 8 GB 1333 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,compact,0,1"
 LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
 OMP_NUM_THREADS = "8"

  Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
  using RHEL 6.1
```

Continued on next page

General Notes (Continued)

```
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

The Huawei RH2285H v2 and Huawei RH2285 v2 models are electronically equivalent.
The results have been measured on a Huawei RH2285H v2 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
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 -static -parallel -opt-prefetch
-ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xAVX -ipo -O3 -no-prec-div -static -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`

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) `-prof-use`(pass 2) `-static -auto-ilp32 -ansi-alias`

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

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel -static

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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel

465.tonto: -xAVX(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

454.calculix: -xAVX -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-ic12.1-official-linux64.20120425.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-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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