SPEC® CFP2006 Result
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Huawei

Huawei RH1288 v2

$SPECfp^{®}2006 =$ 83.4

SPECfp_base2006 = 77.6

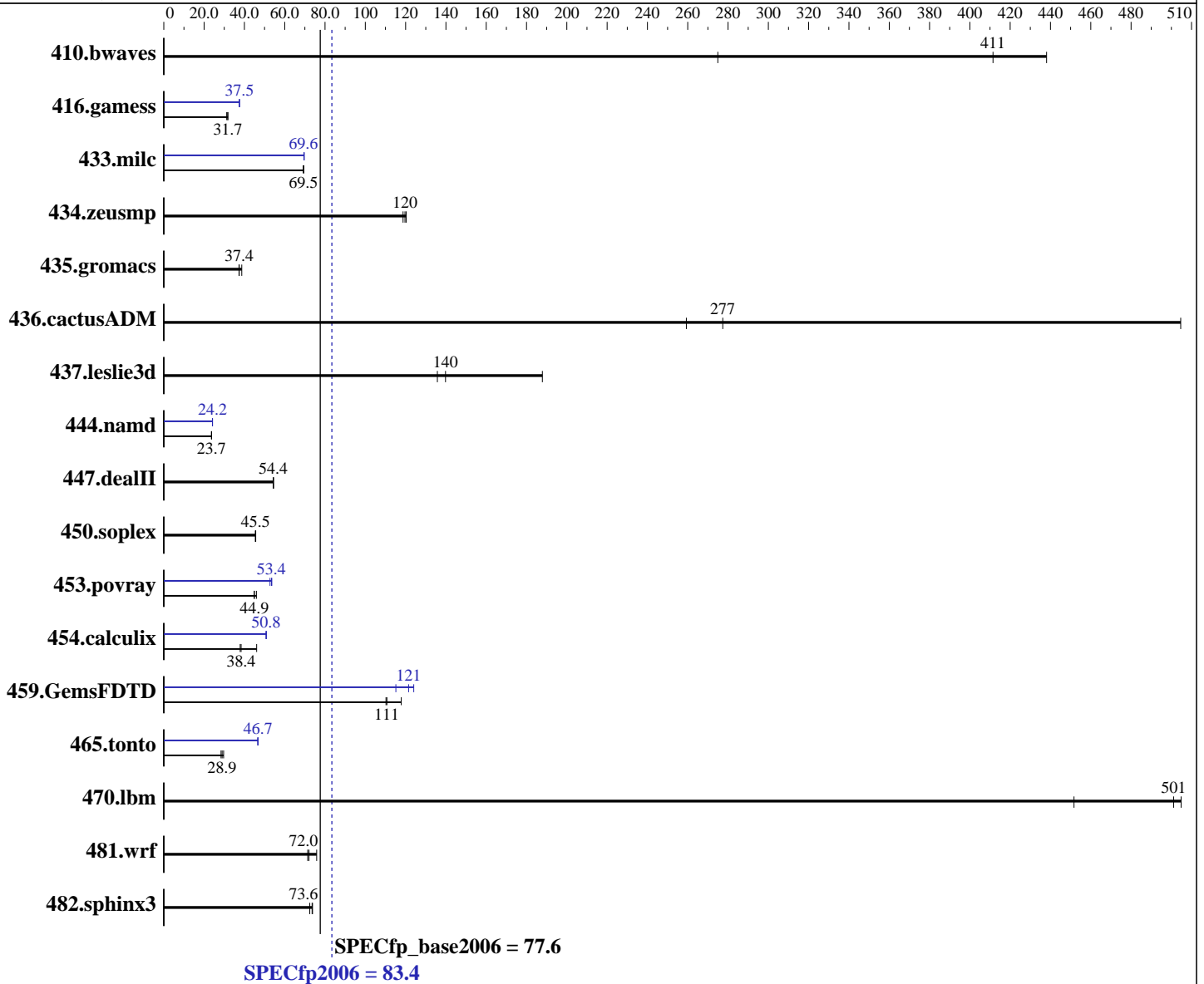| Benchmark	Result
410.bwaves	411
416.gamess	37.5 / 31.7
433.milc	69.6 / 69.5
434.zeusmp	120
435.gromacs	37.4
436.cactusADM	277
437.leslie3d	140
444.namd	24.2 / 23.7
447.dealII	54.4
450.soplex	45.5
453.povray	53.4 / 44.9
454.calculix	50.8 / 38.4
459.GemsFDTD	121 / 111
465.tonto	46.7 / 28.9
470.lbm	501
481.wrf	72.0
482.sphinx3	73.6

SPECfp_base2006 = 77.6
SPECfp2006 = 83.4

Hardware

CPU Name:	Intel Xeon E5-2650 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	2600
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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 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:	Yes
File System:	ext4

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

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

L3 Cache:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 x 500 GB SATA, 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	**33.0**	**411**	49.4	275	31.0	438	**33.0**	**411**	49.4	275	31.0	438
416.gamess	627	31.2	616	31.8	**618**	**31.7**	**522**	**37.5**	522	37.5	522	37.5
433.milc	132	69.5	**132**	**69.5**	133	69.2	132	69.6	**132**	**69.6**	132	69.6
434.zeusmp	75.6	120	**76.0**	**120**	76.6	119	75.6	120	**76.0**	**120**	76.6	119
435.gromacs	185	38.7	191	37.3	**191**	**37.4**	185	38.7	191	37.3	**191**	**37.4**
436.cactusADM	**43.1**	**277**	46.1	259	23.7	505	**43.1**	**277**	46.1	259	23.7	505
437.leslie3d	**67.2**	**140**	50.0	188	69.2	136	**67.2**	**140**	50.0	188	69.2	136
444.namd	339	23.7	339	23.7	**339**	**23.7**	332	24.2	332	24.2	**332**	**24.2**
447.dealII	210	54.4	**210**	**54.4**	211	54.3	210	54.4	**210**	**54.4**	211	54.3
450.soplex	**183**	**45.5**	183	45.6	183	45.5	**183**	**45.5**	183	45.6	183	45.5
453.povray	116	46.0	118	44.9	**118**	**44.9**	**99.6**	**53.4**	99.3	53.6	101	52.7
454.calculix	218	37.9	179	46.1	**215**	**38.4**	162	50.8	**162**	**50.8**	162	50.8
459.GemsFDTD	96.2	110	90.0	118	**95.8**	**111**	**87.3**	**121**	85.5	124	92.1	115
465.tonto	**340**	**28.9**	346	28.4	332	29.7	210	46.8	**211**	**46.7**	211	46.6
470.lbm	27.2	505	**27.4**	**501**	30.4	452	27.2	505	**27.4**	**501**	30.4	452
481.wrf	**155**	**72.0**	156	71.4	147	75.9	**155**	**72.0**	156	71.4	147	75.9
482.sphinx3	**265**	**73.6**	264	73.8	269	72.4	**265**	**73.6**	264	73.8	269	72.4

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.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on huawei Fri Apr  4 14:31:04 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 E5-2650 v2 @ 2.60GHz
```

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Platform Notes (Continued)

```
      2 "physical id"s (chips)
      16 "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  : 8
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
   cache size : 20480 KB

 From /proc/meminfo
    MemTotal:      132103760 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 huawei 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 Apr 4 08:46

 SPEC is set to: /spec
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda1       ext4  193G  114G   70G  63% /

 Additional information from dmidecode:
   BIOS Insyde Corp. RMIBV372 12/21/2013
   Memory:
    16x NO DIMM NO DIMM
    2x Samsung M393B2G70DB0-CMA 16 GB 1866 MHz 2 rank
    6x Samsung M393B2G70QH0-CMA 16 GB 1866 MHz 2 rank

 (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"
 OMP_NUM_THREADS = "16"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
```

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General Notes (Continued)

```
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
The Huawei RH2288H v2 and Huawei RH2288 v2 and
the Huawei RH1288 v2 models are electronically equivalent.
The results have been measured on a Huawei RH2288H 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 -parallel -opt-prefetch -ansi-alias
```

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Base Optimization Flags (Continued)

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

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

Benchmarks using both Fortran and C:
```
-xAVX -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
```

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) -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
```

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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: 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: 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-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

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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 Jul 24 22:48:34 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 June 2014.