SPEC® CFP2006 Result
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Huawei

Huawei RH1288 V3 (Intel Xeon E5-2623 v3)

$SPECfp^{®}2006 =$ 78.1

$SPECfp\_base2006 =$ 72.6

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

410.bwaves 289
416.gamess 45.3 / 32.7
433.milc 68.9 / 68.8
434.zeusmp 107
435.gromacs 42.0
436.cactusADM 222
437.leslie3d 151
444.namd 28.2 / 27.3
447.dealII 57.5
450.soplex 33.9
453.povray 65.9 / 59.8
454.calculix 54.6 / 45.9
459.GemsFDTD 88.5 / 87.1
465.tonto 54.0 / 36.4
470.lbm 379
481.wrf 40.5
482.sphinx3 76.7 / 61.6

SPECfp_base2006 = 72.6
SPECfp2006 = 78.1

Hardware

CPU Name:	Intel Xeon E5-2623 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.50 GHz
CPU MHz:	3000
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 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

Continued on next page

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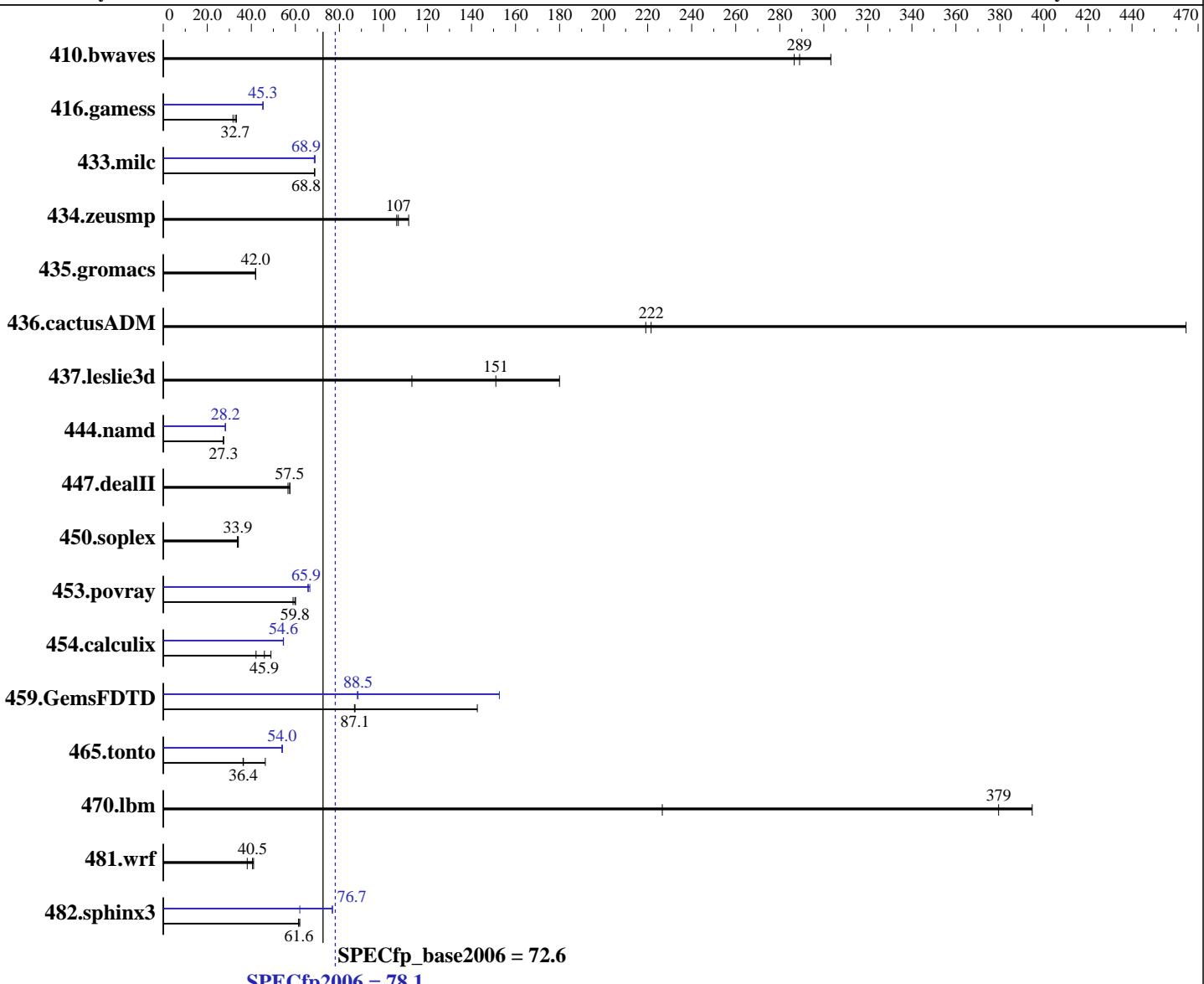|	
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L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (16 x 8 GB 2Rx4 PC4-2133P-R, running at 1867 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**47.0**	**289**	47.4	287	44.8	303	**47.0**	**289**	47.4	287	44.8	303
416.gamess	**599**	**32.7**	618	31.7	589	33.2	433	45.2	432	45.3	**432**	**45.3**
433.milc	134	68.8	**134**	**68.8**	134	68.7	**133**	**68.9**	133	68.9	134	68.6
434.zeusmp	85.8	106	81.6	111	**85.2**	**107**	85.8	106	81.6	111	**85.2**	**107**
435.gromacs	170	41.9	170	42.0	**170**	**42.0**	170	41.9	170	42.0	**170**	**42.0**
436.cactusADM	**53.9**	**222**	25.7	464	54.5	219	**53.9**	**222**	25.7	464	54.5	219
437.leslie3d	**62.2**	**151**	83.2	113	52.2	180	**62.2**	**151**	83.2	113	52.2	180
444.namd	293	27.3	**293**	**27.3**	293	27.4	**284**	**28.2**	284	28.2	284	28.2
447.dealII	199	57.5	**199**	**57.5**	202	56.6	199	57.5	**199**	**57.5**	202	56.6
450.soplex	244	34.1	248	33.6	**246**	**33.9**	244	34.1	248	33.6	**246**	**33.9**
453.povray	**89.0**	**59.8**	90.2	59.0	88.5	60.1	**80.7**	**65.9**	81.0	65.7	79.9	66.6
454.calculix	169	48.9	**180**	**45.9**	196	42.1	151	54.5	151	54.6	**151**	**54.6**
459.GemsFDTD	74.4	143	**122**	**87.1**	122	86.8	120	88.1	69.5	153	**120**	**88.5**
465.tonto	212	46.3	272	36.2	**270**	**36.4**	**182**	**54.0**	183	53.9	182	54.1
470.lbm	60.6	227	**36.2**	**379**	34.8	395	60.6	227	**36.2**	**379**	34.8	395
481.wrf	272	41.0	**276**	**40.5**	293	38.1	272	41.0	**276**	**40.5**	293	38.1
482.sphinx3	314	62.0	317	61.4	**316**	**61.6**	253	76.9	**254**	**76.7**	314	62.0

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
    Set Hyper-Threading to Disabled
    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 huawei Fri Mar 21 08:30:41 2014

Continued on next page

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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 E5-2623 v3 @ 3.00GHz
      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:       131903868 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 Mar 20 21:23

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda1       ext4  438G   69G  347G  17% /

Additional information from dmidecode:
  BIOS Insyde Corp. 1.16 09/02/2014
  Memory:
   8x Samsung M393A1G40DB0-CPB 8 GB 1867 MHz 1 rank
   8x Samsung M393A1G40DB0-CPB 8 GB 1867 MHz 2 rank

(End of data from sysinfo program)
```

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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 = "8"

 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
 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
```

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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
```

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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
                 -parallel
```

Continued on next page

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Peak Optimization Flags (Continued)

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

    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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.1.html

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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-V1.1.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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