SPEC® CFP2006 Result

Huawei

Huawei CH140 (Intel Xeon E5-2630L v2)

$SPECfp^{®}2006 =$ 79.1
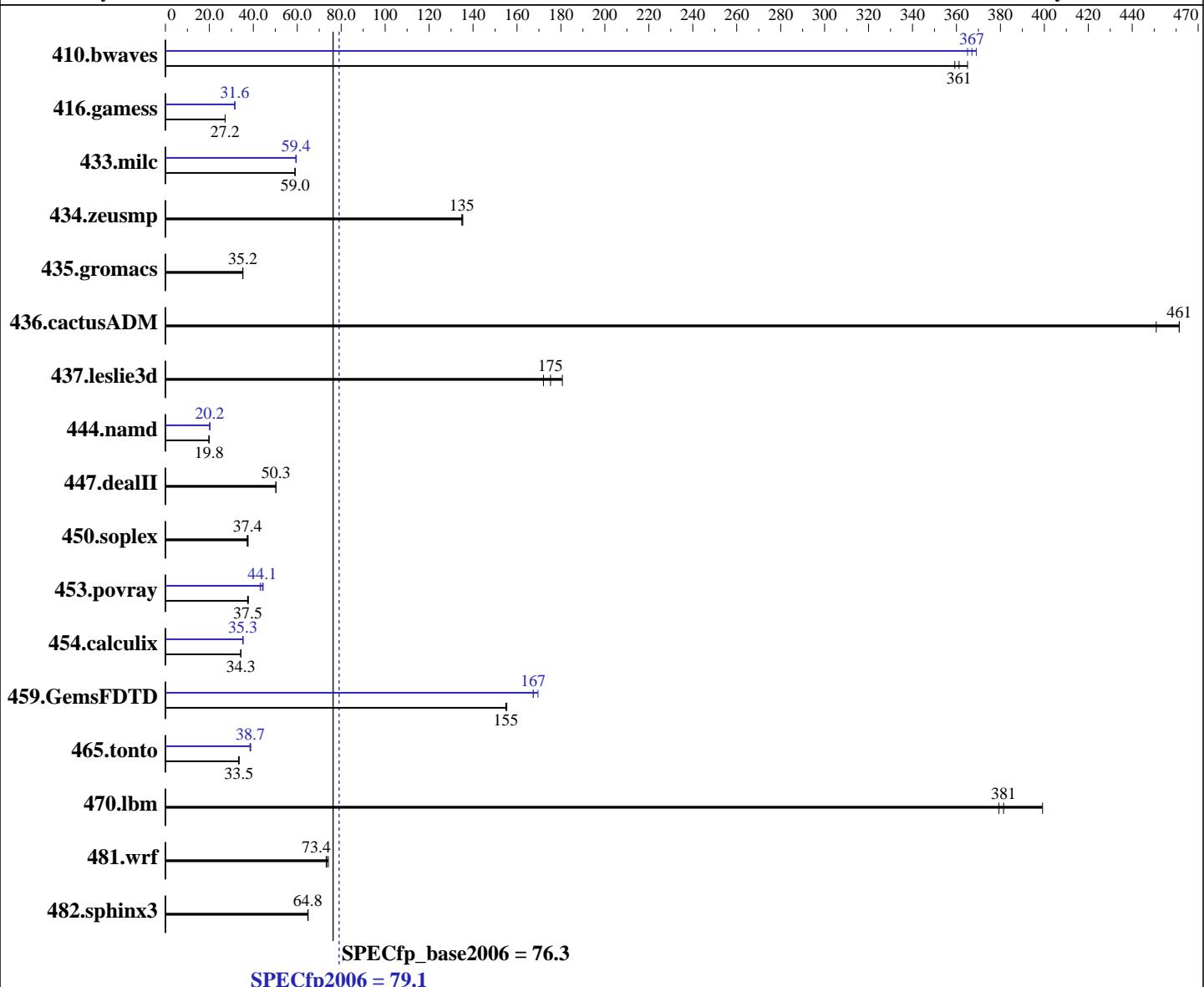
$SPECfp\_base2006 =$ 76.3

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

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

Benchmark	Result
410.bwaves	367 / 361
416.gamess	31.6 / 27.2
433.milc	59.4 / 59.0
434.zeusmp	135
435.gromacs	35.2
436.cactusADM	461
437.leslie3d	175
444.namd	20.2 / 19.8
447.dealII	50.3
450.soplex	37.4
453.povray	44.1 / 37.5
454.calculix	35.3 / 34.3
459.GemsFDTD	167 / 155
465.tonto	38.7 / 33.5
470.lbm	381
481.wrf	73.4
482.sphinx3	64.8

SPECfp_base2006 = 76.3
SPECfp2006 = 79.1

Hardware

CPU Name:	Intel Xeon E5-2630L v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
CPU(s) orderable:	1,2 chips
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:	ext3

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L3 Cache:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 X 500 GB SATA 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	**37.6**	**361**	37.8	359	37.2	365	**37.0**	**367**	36.8	369	37.2	365
416.gamess	720	27.2	**720**	**27.2**	721	27.2	**620**	**31.6**	621	31.6	620	31.6
433.milc	156	58.9	155	59.0	**156**	**59.0**	155	59.4	**155**	**59.4**	154	59.6
434.zeusmp	**67.4**	**135**	67.4	135	67.2	135	**67.4**	**135**	67.4	135	67.2	135
435.gromacs	**203**	**35.2**	203	35.2	203	35.2	**203**	**35.2**	203	35.2	203	35.2
436.cactusADM	**25.9**	**461**	25.9	461	26.5	451	**25.9**	**461**	25.9	461	26.5	451
437.leslie3d	54.6	172	52.0	181	**53.6**	**175**	54.6	172	52.0	181	**53.6**	**175**
444.namd	404	19.9	**404**	**19.8**	404	19.8	397	20.2	397	20.2	**397**	**20.2**
447.dealII	227	50.3	**227**	**50.3**	228	50.3	227	50.3	**227**	**50.3**	228	50.3
450.soplex	**223**	**37.4**	224	37.2	222	37.6	**223**	**37.4**	224	37.2	222	37.6
453.povray	**142**	**37.5**	142	37.4	141	37.8	120	44.5	**121**	**44.1**	123	43.2
454.calculix	241	34.3	240	34.4	**241**	**34.3**	**234**	**35.3**	234	35.3	234	35.3
459.GemsFDTD	**68.5**	**155**	68.3	155	68.5	155	**63.4**	**167**	62.6	170	63.4	167
465.tonto	294	33.5	296	33.3	**294**	**33.5**	254	38.8	256	38.5	**254**	**38.7**
470.lbm	**36.0**	**381**	36.2	379	34.4	399	**36.0**	**381**	36.2	379	34.4	399
481.wrf	151	74.1	153	73.2	**152**	**73.4**	151	74.1	153	73.2	**152**	**73.4**
482.sphinx3	301	64.8	300	64.9	**301**	**64.8**	301	64.8	300	64.9	**301**	**64.8**

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 Mon Jul 14 19:07:31 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 E5-2630L v2 @ 2.40GHz
```
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Platform Notes (Continued)

```
     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:       132105632 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 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 Jul 14 12:12

 SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       ext3  455G   83G  349G  20% /

 Additional information from dmidecode:
   Memory:
   8x Samsung M393B2G70BH0-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:
 KMP_AFFINITY = "granularity=fine,compact,0,1"
 LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
 OMP_NUM_THREADS = "12"

 Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
 using RHEL 6.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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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
```

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
```

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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

        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

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Peak Optimization Flags (Continued)

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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