SPEC® CFP2006 Result
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Huawei
Huawei CH121

$SPECfp^{®}2006 =$ 85.7

$SPECfp\_base2006 =$ 82.8

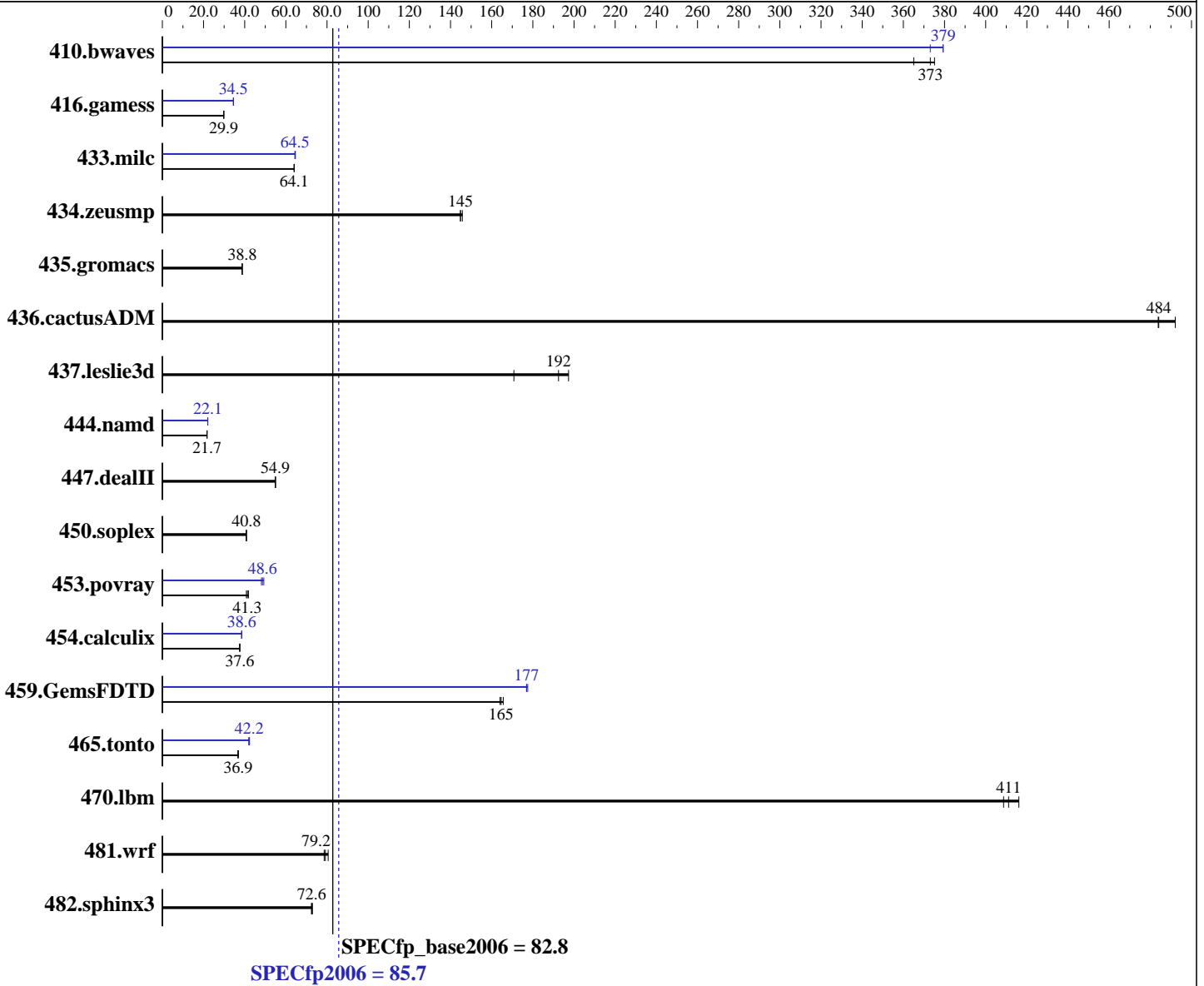|	
CPU2006 license: 3175	**Test date:** May-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2013
Tested by: Huawei	**Software Availability:** Nov-2013

Benchmark results:

- 410.bwaves: 379 / 373
- 416.gamess: 34.5 / 29.9
- 433.milc: 64.5 / 64.1
- 434.zeusmp: 145
- 435.gromacs: 38.8
- 436.cactusADM: 484
- 437.leslie3d: 192
- 444.namd: 22.1 / 21.7
- 447.dealII: 54.9
- 450.soplex: 40.8
- 453.povray: 48.6 / 41.3
- 454.calculix: 38.6 / 37.6
- 459.GemsFDTD: 177 / 165
- 465.tonto: 42.2 / 36.9
- 470.lbm: 411
- 481.wrf: 79.2
- 482.sphinx3: 72.6

SPECfp_base2006 = 82.8
SPECfp2006 = 85.7

Hardware

CPU Name:	Intel Xeon E5-2630 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2600
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 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, 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	**36.4**	**373**	36.2	375	37.2	365	35.8	379	36.4	373	**35.8**	**379**
416.gamess	**656**	**29.9**	658	29.8	656	29.9	567	34.5	**567**	**34.5**	567	34.5
433.milc	**143**	**64.1**	143	64.1	143	64.0	**142**	**64.5**	143	64.4	142	64.7
434.zeusmp	62.4	146	62.8	145	**62.8**	**145**	62.4	146	62.8	145	**62.8**	**145**
435.gromacs	**184**	**38.8**	184	38.8	184	38.8	**184**	**38.8**	184	38.8	184	38.8
436.cactusADM	**24.7**	**484**	24.7	484	24.3	492	**24.7**	**484**	24.7	484	24.3	492
437.leslie3d	47.6	197	**48.8**	**192**	55.0	171	47.6	197	**48.8**	**192**	55.0	171
444.namd	370	21.7	**370**	**21.7**	370	21.7	**363**	**22.1**	364	22.1	363	22.1
447.dealII	208	54.9	208	54.9	**208**	**54.9**	208	54.9	208	54.9	**208**	**54.9**
450.soplex	**204**	**40.8**	205	40.8	204	40.8	**204**	**40.8**	205	40.8	204	40.8
453.povray	130	40.8	127	41.8	**129**	**41.3**	111	48.1	108	49.3	**109**	**48.6**
454.calculix	219	37.6	220	37.6	**219**	**37.6**	214	38.6	214	38.5	**214**	**38.6**
459.GemsFDTD	**64.5**	**165**	64.7	164	64.1	166	60.0	177	**60.0**	**177**	59.8	178
465.tonto	268	36.7	267	36.9	**267**	**36.9**	234	42.0	**233**	**42.2**	232	42.4
470.lbm	**33.4**	**411**	33.6	409	33.0	416	**33.4**	**411**	33.6	409	33.0	416
481.wrf	142	78.6	139	80.6	**141**	**79.2**	142	78.6	139	80.6	**141**	**79.2**
482.sphinx3	269	72.4	267	72.9	**268**	**72.6**	269	72.4	267	72.9	**268**	**72.6**

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

```
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Tue May 27 14:58:01 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 E5-2630 v2 @ 2.60GHz
```
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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:       132105680 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 27 08:38

SPEC is set to: /spec
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda2       ext4  265G  163G   89G  65% /

Additional information from dmidecode:
  Memory:
    16x Micron 36JSF1G72PZ-1G6K1 8 GB 1600 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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