SPEC® CFP2006 Result
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Huawei

$SPECfp^{®}2006 =$ 78.2

Huawei RH2288A V2 (Intel Xeon E5-2630L v2)

$SPECfp\_base2006 =$ 75.4

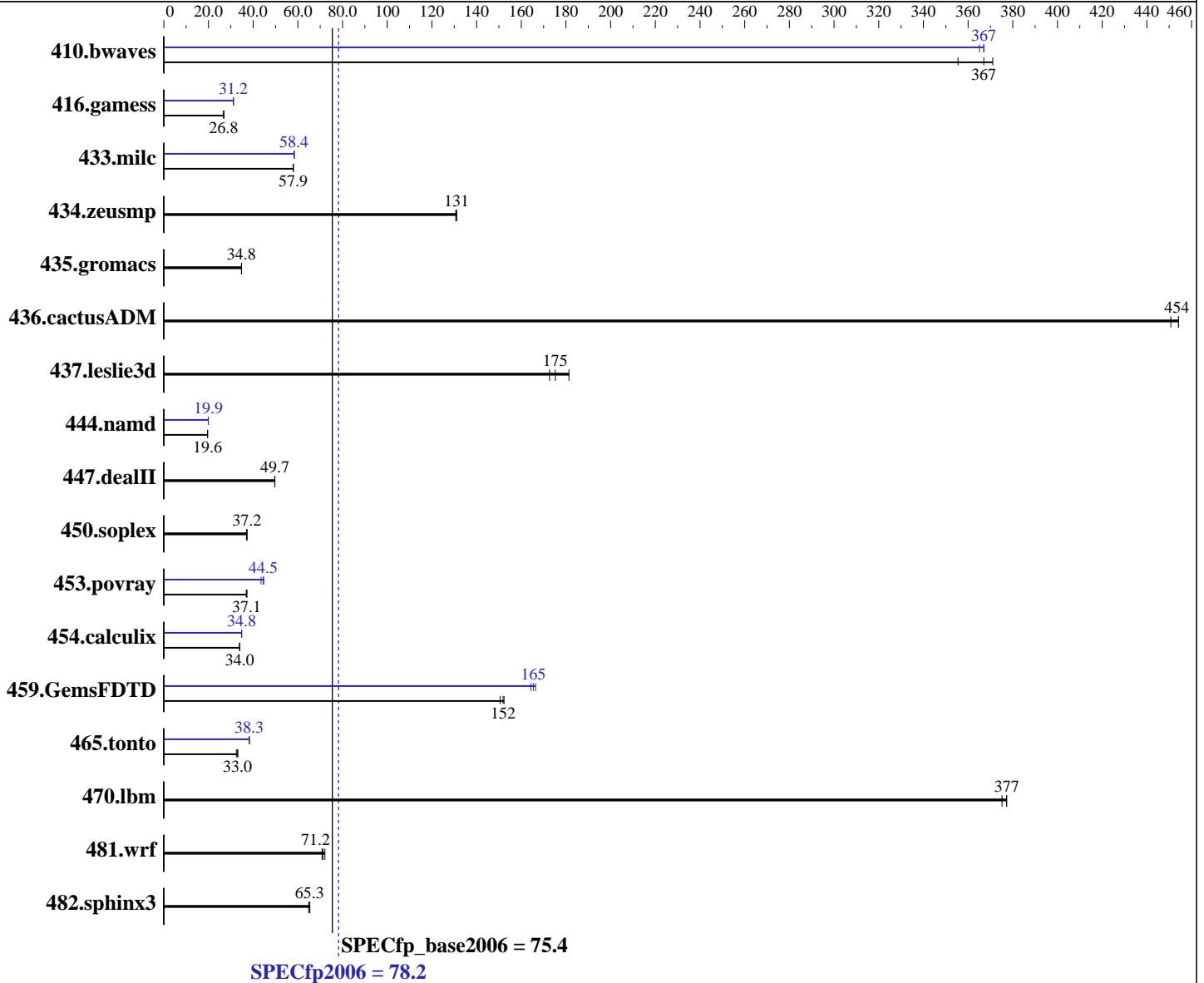|	
CPU2006 license: 3175	**Test date:** Sep-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2013
Tested by: Huawei	**Software Availability:** Nov-2013

Results chart (axis 0 to 460):
- 410.bwaves: 367 / 367
- 416.gamess: 31.2 / 26.8
- 433.milc: 58.4 / 57.9
- 434.zeusmp: 131
- 435.gromacs: 34.8
- 436.cactusADM: 454
- 437.leslie3d: 175
- 444.namd: 19.9 / 19.6
- 447.dealII: 49.7
- 450.soplex: 37.2
- 453.povray: 44.5 / 37.1
- 454.calculix: 34.8 / 34.0
- 459.GemsFDTD: 165 / 152
- 465.tonto: 38.3 / 33.0
- 470.lbm: 377
- 481.wrf: 71.2
- 482.sphinx3: 65.3

SPECfp_base2006 = 75.4

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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 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
	Continued on next page

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L3 Cache:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC3-14900R-11, ECC, running at 1600 MHz)
Disk Subsystem:	1 x 500 GB SATA, 7200 RPM
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 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	38.2	355	**37.0**	**367**	36.6	371	**37.0**	**367**	37.0	367	37.2	365
416.gamess	730	26.8	729	26.9	**730**	**26.8**	628	31.2	**628**	**31.2**	629	31.1
433.milc	158	58.0	**158**	**57.9**	158	57.9	157	58.3	157	58.4	**157**	**58.4**
434.zeusmp	69.6	131	**69.4**	**131**	69.4	131	69.6	131	**69.4**	**131**	69.4	131
435.gromacs	205	34.8	**205**	**34.8**	205	34.8	205	34.8	**205**	**34.8**	205	34.8
436.cactusADM	26.3	454	**26.3**	**454**	26.5	451	26.3	454	**26.3**	**454**	26.5	451
437.leslie3d	54.4	173	51.8	181	**53.6**	**175**	54.4	173	51.8	181	**53.6**	**175**
444.namd	409	19.6	409	19.6	**409**	**19.6**	**402**	**19.9**	403	19.9	402	19.9
447.dealII	**230**	**49.7**	230	49.7	230	49.7	**230**	**49.7**	230	49.7	230	49.7
450.soplex	224	37.3	226	37.0	**224**	**37.2**	224	37.3	226	37.0	**224**	**37.2**
453.povray	143	37.2	**143**	**37.1**	144	36.9	122	43.5	**119**	**44.5**	119	44.7
454.calculix	243	34.0	**243**	**34.0**	243	33.9	237	34.9	**237**	**34.8**	237	34.8
459.GemsFDTD	69.7	152	**69.9**	**152**	70.5	151	64.6	164	63.8	166	**64.2**	**165**
465.tonto	303	32.5	**298**	**33.0**	297	33.1	**257**	**38.3**	257	38.3	257	38.3
470.lbm	**36.4**	**377**	36.4	377	36.6	375	**36.4**	**377**	36.4	377	36.6	375
481.wrf	155	72.1	158	70.8	**157**	**71.2**	155	72.1	158	70.8	**157**	**71.2**
482.sphinx3	301	64.8	298	65.4	**299**	**65.3**	301	64.8	298	65.4	**299**	**65.3**

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
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost Wed Sep  3 04:12:31 2014

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
```

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Test date: Sep-2014
Hardware Availability: Sep-2013
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Platform Notes (Continued)

```
   http://www.spec.org/cpu2006/Docs/config.html#sysinfo

 From /proc/cpuinfo
    model name : Intel(R) Xeon(R) CPU E5-2630L v2 @ 2.40GHz
       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:       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 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 Sep 2 21:21

 SPEC is set to: /spec
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda1       ext4  439G   74G  343G  18% /

 Additional information from dmidecode:
   Memory:
    8x Samsung M393B2G70QH0-CMA 16 GB 1867 MHz 2 rank

 (End of data from sysinfo program)
 Dmidecode mistakenly believes the memory was running at 1866 MHz, when it should only run at 1600 MHz
```

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"
```

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General Notes (Continued)

```
Binaries compiled on a system with 2x Xeon X5645 CPU + 16GB memory
using RHEL 6.1
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
The Huawei RH2288A V2 and Huawei RH1288A V2
are electronically equivalent.
The results have been measured on a Huawei RH2288A 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
```

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Tested by: Huawei		**Software Availability:**	Nov-2013

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
```

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
```

Continued on next page

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Peak Optimization Flags (Continued)

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`

      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-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.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-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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