SPEC® CFP2006 Result

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Huawei

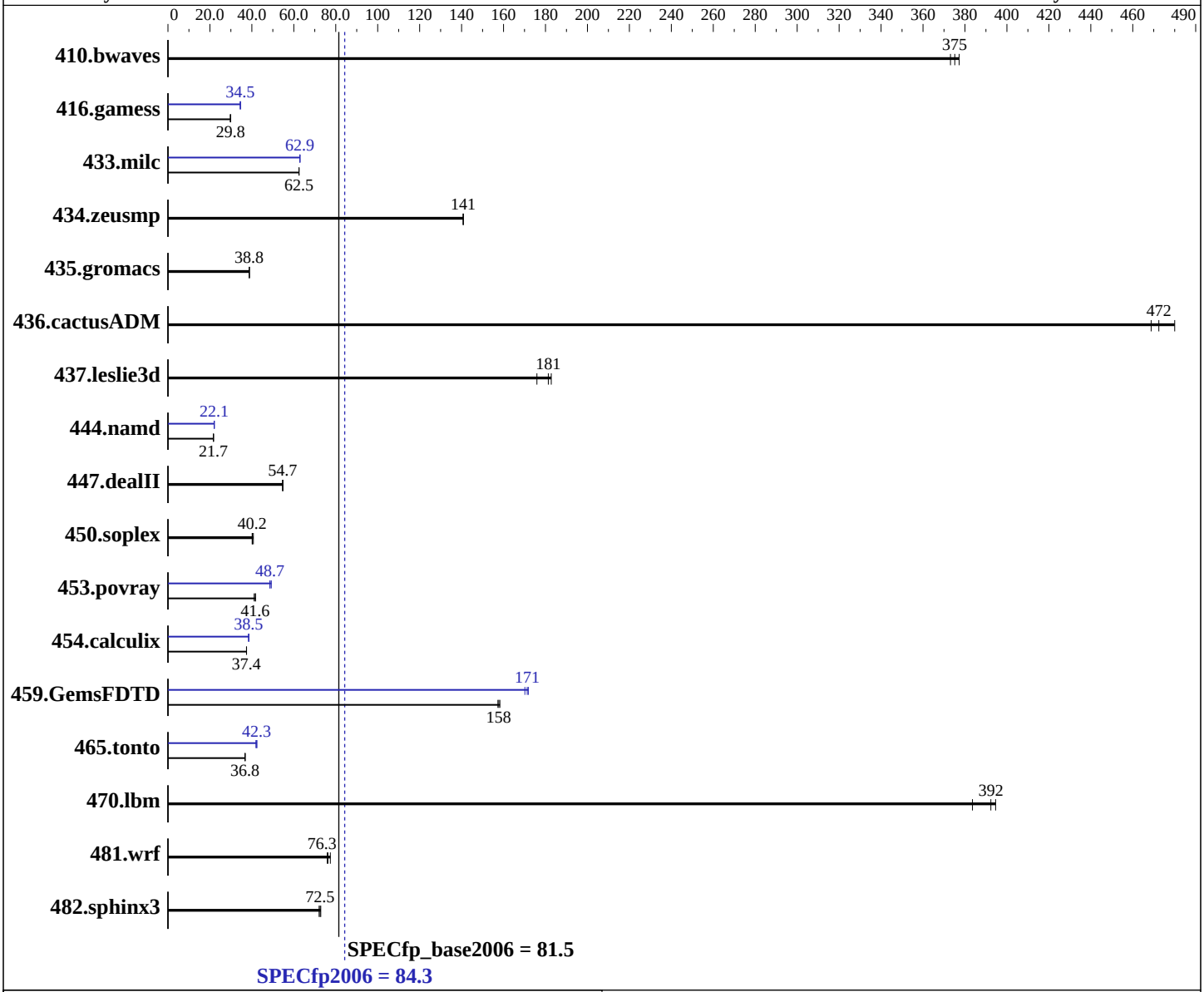
Huawei RH2288A V2 (Intel Xeon E5-2630 v2)

SPECfp®2006 = 84.3

SPECfp_base2006 = 81.5

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

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



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

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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 (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						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	36.4	373	**36.2**	**375**	36.0	377	36.4	373	**36.2**	**375**	36.0	377
416.gamess	**657**	**29.8**	657	29.8	657	29.8	568	34.5	567	34.5	**567**	**34.5**
433.milc	**147**	**62.5**	147	62.5	147	62.4	146	62.9	**146**	**62.9**	146	63.0
434.zeusmp	64.6	141	**64.6**	**141**	64.6	141	64.6	141	**64.6**	**141**	64.6	141
435.gromacs	184	38.8	**184**	**38.8**	184	38.8	184	38.8	**184**	**38.8**	184	38.8
436.cactusADM	**25.3**	**472**	25.5	469	24.9	480	**25.3**	**472**	25.5	469	24.9	480
437.leslie3d	**51.8**	**181**	53.4	176	51.4	183	**51.8**	**181**	53.4	176	51.4	183
444.namd	370	21.7	**370**	**21.7**	370	21.7	**363**	**22.1**	364	22.1	363	22.1
447.dealII	**209**	**54.7**	209	54.6	209	54.8	**209**	**54.7**	209	54.6	209	54.8
450.soplex	208	40.2	**207**	**40.2**	205	40.7	208	40.2	**207**	**40.2**	205	40.7
453.povray	**128**	**41.6**	129	41.1	127	41.7	109	48.6	108	49.3	**109**	**48.7**
454.calculix	220	37.5	**220**	**37.4**	220	37.4	214	38.5	**214**	**38.5**	214	38.5
459.GemsFDTD	**67.3**	**158**	67.0	158	67.4	157	61.8	172	62.3	170	**61.9**	**171**
465.tonto	**268**	**36.8**	268	36.8	267	36.8	235	41.9	232	42.4	**233**	**42.3**
470.lbm	34.8	395	**35.0**	**392**	35.8	384	34.8	395	**35.0**	**392**	35.8	384
481.wrf	**146**	**76.3**	144	77.4	147	76.0	**146**	**76.3**	144	77.4	147	76.0
482.sphinx3	267	72.9	270	72.1	**269**	**72.5**	267	72.9	270	72.1	**269**	**72.5**

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 Aug 20 14:28:54 2014

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

Continued on next page

Platform Notes (Continued)

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

    From /proc/cpuinfo
       model name : Intel(R) Xeon(R) CPU E5-2630 v2 @ 2.60GHz
          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 Aug 20 07:52

    SPEC is set to: /spec
       Filesystem     Type  Size  Used Avail Use% Mounted on
       /dev/sda1      ext4  439G   59G  358G  15% /

    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"
```

Continued on next page

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
```

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

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: 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- -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

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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For other inquiries, please contact webmaster@spec.org.

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