SPEC® CFP2006 Result

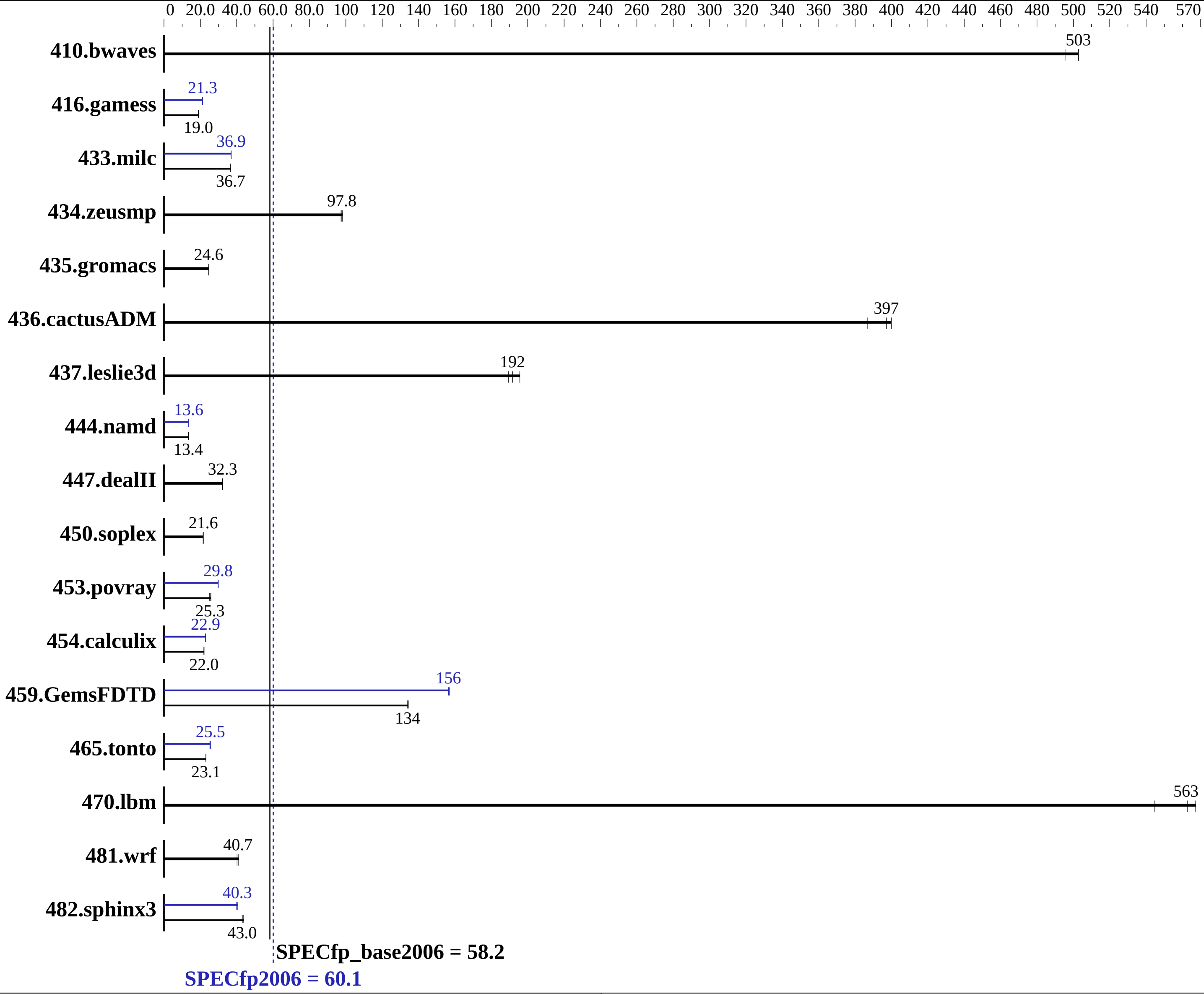
Huawei

Huawei RH5885H V3 (Intel Xeon E7-4809 v2)

SPECfp®2006 = 60.1

SPECfp_base2006 = 58.2

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



Hardware

CPU Name:	Intel Xeon E7-4809 v2
CPU Characteristics:	
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip
CPU(s) orderable:	2,4 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:	ext4

Continued on next page

SPEC CFP2006 Result

Huawei

Huawei RH5885H V3 (Intel Xeon E7-4809 v2)

SPECfp2006 = 60.1

SPECfp_base2006 = 58.2

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei
Test date: Oct-2014
Hardware Availability: Feb-2014
Software Availability: Nov-2013

L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL7)
Disk Subsystem:	2 x 300 GB SAS, 10K 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	**27.0**	**503**	27.0	503	27.4	495	**27.0**	**503**	27.0	503	27.4	495
416.gamess	1030	19.0	1034	18.9	**1032**	**19.0**	922	21.2	**921**	**21.3**	921	21.3
433.milc	**250**	**36.7**	252	36.4	250	36.7	**249**	**36.9**	248	37.0	249	36.9
434.zeusmp	92.7	98.2	**93.1**	**97.8**	93.5	97.4	92.7	98.2	**93.1**	**97.8**	93.5	97.4
435.gromacs	288	24.8	**290**	**24.6**	290	24.6	288	24.8	**290**	**24.6**	290	24.6
436.cactusADM	**30.1**	**397**	29.9	400	30.9	387	**30.1**	**397**	29.9	400	30.9	387
437.leslie3d	48.0	196	**49.0**	**192**	49.6	189	48.0	196	**49.0**	**192**	49.6	189
444.namd	599	13.4	**599**	**13.4**	599	13.4	**589**	**13.6**	589	13.6	589	13.6
447.dealII	354	32.3	**354**	**32.3**	355	32.2	354	32.3	**354**	**32.3**	355	32.2
450.soplex	386	21.6	**386**	**21.6**	388	21.5	386	21.6	**386**	**21.6**	388	21.5
453.povray	206	25.8	212	25.1	**210**	**25.3**	**179**	**29.8**	178	29.9	179	29.8
454.calculix	**375**	**22.0**	374	22.0	376	22.0	360	22.9	360	22.9	**360**	**22.9**
459.GemsFDTD	79.4	134	**79.2**	**134**	79.0	134	67.6	157	67.8	156	**67.8**	**156**
465.tonto	426	23.1	426	23.1	**426**	**23.1**	390	25.3	385	25.6	**385**	**25.5**
470.lbm	25.2	545	24.2	567	**24.4**	**563**	25.2	545	24.2	567	**24.4**	**563**
481.wrf	278	40.2	272	41.1	**274**	**40.7**	278	40.2	272	41.1	**274**	**40.7**
482.sphinx3	453	43.0	**453**	**43.0**	445	43.8	480	40.6	487	40.0	**483**	**40.3**

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 Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
Set Intel Hyper Threading to disabled
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on RH5885HV3 Mon Oct 20 22:40:04 2014
```

Continued on next page

Huawei

Huawei RH5885H V3 (Intel Xeon E7-4809 v2)

SPECfp2006 = 60.1

SPECfp_base2006 = 58.2

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

Test date: Oct-2014
Hardware Availability: Feb-2014
Software Availability: Nov-2013

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 E7-4809 v2 @ 1.90GHz
      4 "physical id"s (chips)
      24 "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
      physical 2: cores 0 1 2 3 4 5
      physical 3: cores 0 1 2 3 4 5
   cache size : 12288 KB

From /proc/meminfo
   MemTotal:       1058606704 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 RH5885HV3 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 Oct 20 12:13

SPEC is set to: /spec
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda5      ext4  321G  3.7G  301G   2% /spec

Additional information from dmidecode:
  Memory:
   60x Hynix HMT42GR7AFR4C-PB 16 GB 1600 MHz 2 rank
   4x Hynix HMT42GR7MFR4C-PB 16 GB 1600 MHz 2 rank

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 1 TB and the dmidecode description should have two lines reading as:
   60x Hynix HMT42GR7AFR4C-PB 16 GB 1600 MHz 2 rank
   4x Hynix HMT42GR7MFR4C-PB 16 GB 1600 MHz 2 rank
```

Continued on next page

Platform Notes (Continued)

```
Dmidecode mistakenly believes the memory was running at 1600 MHz, when it should only run at 1066 MHz
This benchmark result is intended to provide perspective on past
performance using the historical software described on this result page.
The system as described on this result page was formerly generally available(Oct-2014).
But at the time of this publication (November 2014), the compiler specified
(Intel Compiler 12) was not listed as supported per
 https://software.intel.com/en-us/articles/intel-compilers-supported-compiler-versions
This measured result may not be representative of the result that would be measured
were this benchmark run with hardware and software available as of the publication date.
```

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 = "24"

 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
```

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

Continued on next page

Base Portability Flags (Continued)

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: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel

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

Continued on next page

Peak Optimization Flags (Continued)

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

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 18 16:30:15 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 November 2014.