SPEC® CFP2006 Result

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Huawei

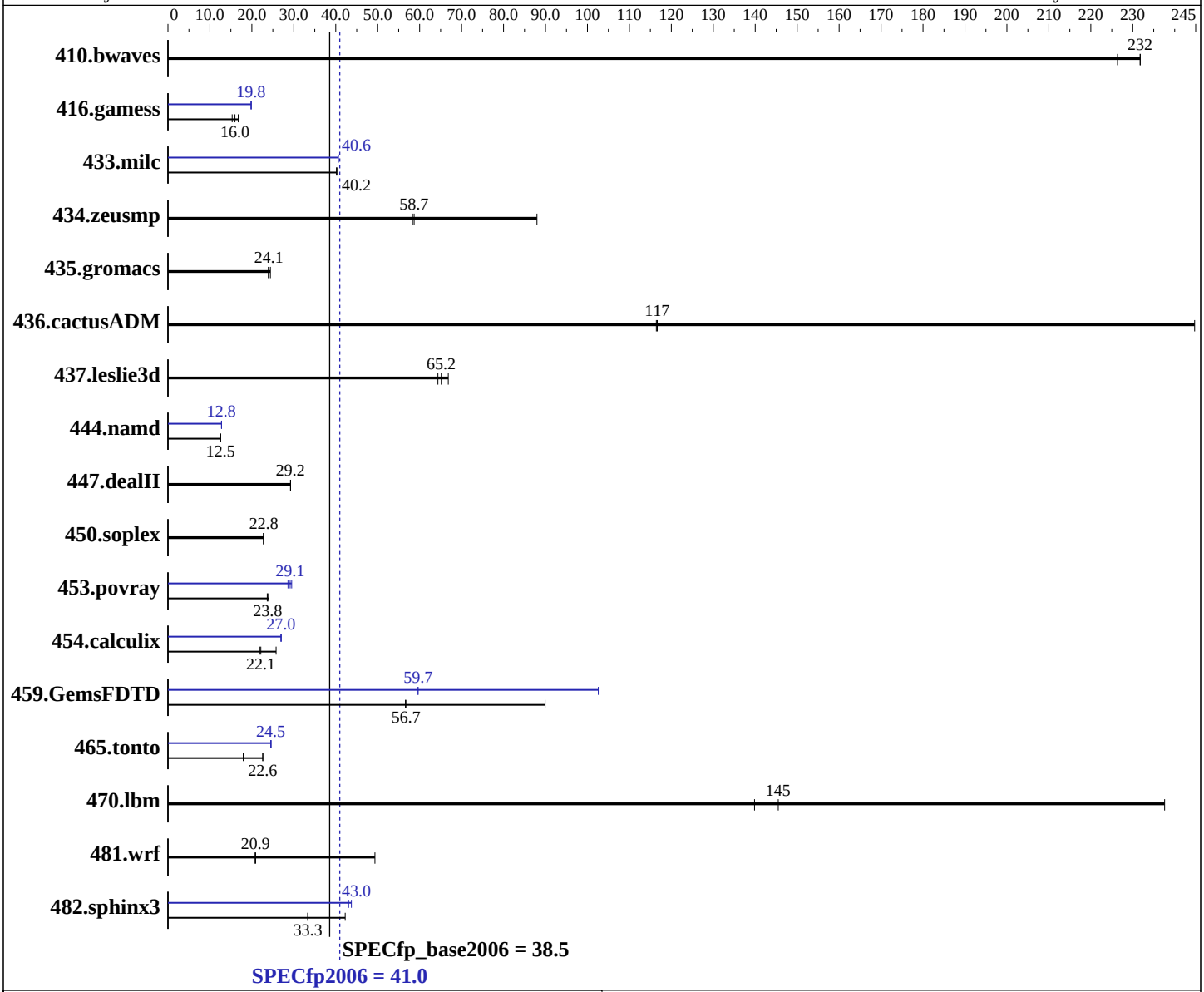
Huawei CH221 (Intel Xeon E5-2603 v2)

SPECfp®2006 = 41.0

SPECfp_base2006 = 38.5

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

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



Hardware

CPU Name:	Intel Xeon E5-2603 v2
CPU Characteristics:	
CPU MHz:	1800
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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 14.0.0.080 of Intel C++ Studio XE for Linux; Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 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	58.6	232	60.0	226	**58.6**	**232**	58.6	232	60.0	226	**58.6**	**232**
416.gamess	1279	15.3	**1226**	**16.0**	1168	16.8	988	19.8	987	19.8	**987**	**19.8**
433.milc	**228**	**40.2**	228	40.2	228	40.2	226	40.6	**226**	**40.6**	226	40.6
434.zeusmp	103	88.0	156	58.3	**155**	**58.7**	103	88.0	156	58.3	**155**	**58.7**
435.gromacs	298	23.9	292	24.4	**297**	**24.1**	298	23.9	292	24.4	**297**	**24.1**
436.cactusADM	48.8	245	**102**	**117**	103	116	48.8	245	**102**	**117**	103	116
437.leslie3d	141	66.8	146	64.4	**144**	**65.2**	141	66.8	146	64.4	**144**	**65.2**
444.namd	**640**	**12.5**	640	12.5	640	12.5	**628**	**12.8**	628	12.8	628	12.8
447.dealII	391	29.2	**391**	**29.2**	392	29.2	391	29.2	**391**	**29.2**	392	29.2
450.soplex	367	22.7	365	22.9	**365**	**22.8**	367	22.7	365	22.9	**365**	**22.8**
453.povray	**224**	**23.8**	225	23.7	222	24.0	**183**	**29.1**	180	29.5	186	28.6
454.calculix	377	21.9	**373**	**22.1**	320	25.8	306	27.0	**306**	**27.0**	306	26.9
459.GemsFDTD	118	89.9	187	56.6	**187**	**56.7**	178	59.5	103	103	**178**	**59.7**
465.tonto	548	17.9	435	22.6	**436**	**22.6**	**401**	**24.5**	400	24.6	401	24.5
470.lbm	**94.4**	**145**	57.8	238	98.3	140	**94.4**	**145**	57.8	238	98.3	140
481.wrf	**534**	**20.9**	226	49.3	540	20.7	**534**	**20.9**	226	49.3	540	20.7
482.sphinx3	585	33.3	461	42.3	**585**	**33.3**	453	43.0	**453**	**43.0**	446	43.7

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 /spec14/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on speccputest Wed Oct 29 16:01:05 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 E5-2603 v2 @ 1.80GHz
          2 "physical id"s (chips)
          8 "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 : 4
          siblings  : 4
          physical 0: cores 0 1 2 3
          physical 1: cores 0 1 2 3
       cache size : 10240 KB

    From /proc/meminfo
       MemTotal:       264478184 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 speccputest 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 18 17:28

    SPEC is set to: /spec14
       Filesystem     Type  Size  Used Avail Use% Mounted on
       /dev/sda2      ext4  451G   63G  366G  15% /

    Additional information from dmidecode:
      BIOS Insyde Corp. RMIBV379 03/19/2014
      Memory:
       16x Hynix HMT42GR7MFR4C-PB 16 GB 1333 MHz 2 rank
       8x NO DIMM NO DIMM

    (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec14/libs/32:/spec14/libs/64:/spec14/sh"
OMP_NUM_THREADS = "8"
```

Continued on next page

General Notes (Continued)

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

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 -parallel -opt-prefetch -ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xAVX -ipo -O3 -no-prec-div -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) `-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`

Continued on next page

Peak Optimization Flags (Continued)

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-

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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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