SPEC® CFP2006 Result
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Huawei

Tecal RH5885 V2

$SPECfp^{®}2006 =$ 55.9

$SPECfp\_base2006 =$ 54.0

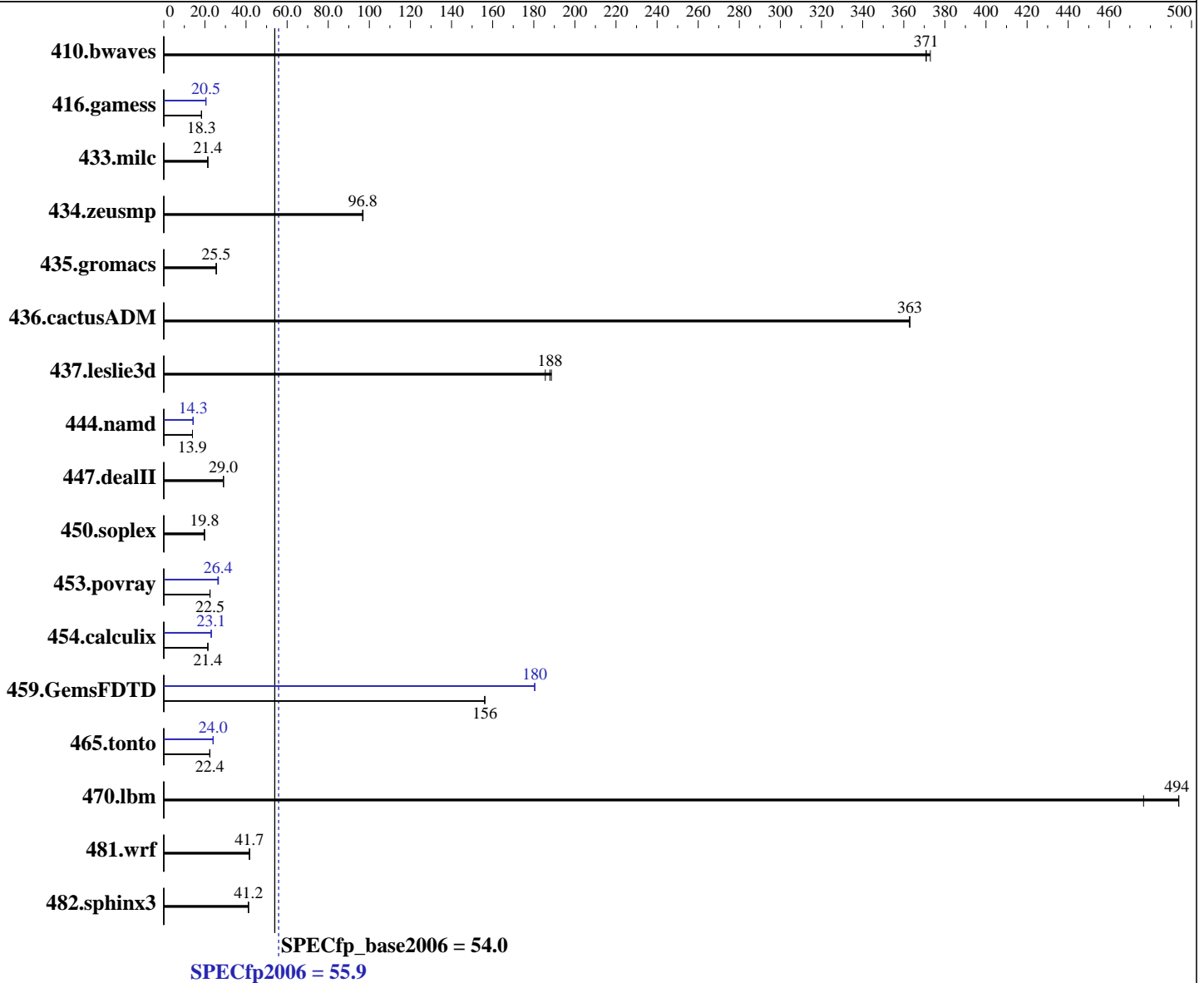|	
CPU2006 license: 13	**Test date:** Oct-2012
Test sponsor: Huawei	**Hardware Availability:** Oct-2012
Tested by: Huawei	**Software Availability:** Oct-2012

- 410.bwaves: 371
- 416.gamess: 20.5 / 18.3
- 433.milc: 21.4
- 434.zeusmp: 96.8
- 435.gromacs: 25.5
- 436.cactusADM: 363
- 437.leslie3d: 188
- 444.namd: 14.3 / 13.9
- 447.dealII: 29.0
- 450.soplex: 19.8
- 453.povray: 26.4 / 22.5
- 454.calculix: 23.1 / 21.4
- 459.GemsFDTD: 180 / 156
- 465.tonto: 24.0 / 22.4
- 470.lbm: 494
- 481.wrf: 41.7
- 482.sphinx3: 41.2

SPECfp_base2006 = 54.0

SPECfp2006 = 55.9

Hardware

CPU Name:	Intel Xeon E7-4830
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	2133
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 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 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 13.0.0.079 of Intel C++ Studio XE for Linux; Fortran: Version 13.0.0.079 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

Continued on next page

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L3 Cache:	24 MB I+D on chip per chip	System State:	Run level 3 (add definition here)
Other Cache:	None	Base Pointers:	64-bit
Memory:	512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 1066 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	100 GB SSD		
Other Hardware:	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	**36.6**	**371**	36.6	371	36.4	373	**36.6**	**371**	36.6	371	36.4	373
416.gamess	**1067**	**18.3**	1069	18.3	1067	18.4	**956**	**20.5**	956	20.5	956	20.5
433.milc	428	21.4	**429**	**21.4**	429	21.4	428	21.4	**429**	**21.4**	429	21.4
434.zeusmp	**94.1**	**96.8**	94.1	96.7	93.9	97.0	**94.1**	**96.8**	94.1	96.7	93.9	97.0
435.gromacs	**280**	**25.5**	281	25.4	279	25.6	**280**	**25.5**	281	25.4	279	25.6
436.cactusADM	32.9	363	32.9	363	**32.9**	**363**	32.9	363	32.9	363	**32.9**	**363**
437.leslie3d	**50.0**	**188**	50.6	186	49.8	189	**50.0**	**188**	50.6	186	49.8	189
444.namd	**575**	**13.9**	575	13.9	575	14.0	**563**	**14.3**	563	14.3	563	14.2
447.dealII	393	29.1	395	29.0	**394**	**29.0**	393	29.1	395	29.0	**394**	**29.0**
450.soplex	420	19.9	**421**	**19.8**	425	19.6	420	19.9	**421**	**19.8**	425	19.6
453.povray	237	22.5	236	22.5	**237**	**22.5**	202	26.3	**201**	**26.4**	200	26.6
454.calculix	385	21.4	**385**	**21.4**	385	21.4	357	23.1	**357**	**23.1**	357	23.1
459.GemsFDTD	**67.9**	**156**	67.9	156	67.9	156	**58.8**	**180**	58.8	180	58.8	180
465.tonto	**439**	**22.4**	440	22.4	439	22.4	**410**	**24.0**	410	24.0	410	24.0
470.lbm	27.8	494	28.8	477	**27.8**	**494**	27.8	494	28.8	477	**27.8**	**494**
481.wrf	268	41.6	268	41.7	**268**	**41.7**	268	41.6	268	41.7	**268**	**41.7**
482.sphinx3	**473**	**41.2**	472	41.3	475	41.1	**473**	**41.2**	472	41.3	475	41.1

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:
Intel Hyper-Threading set to Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on Huawei-RH5885 Thu Oct 11 02:43:52 2012

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
```

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Platform Notes (Continued)

```
From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E7- 4830 @ 2.13GHz
      4 "physical id"s (chips)
      32 "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 : 8
      siblings  : 8
      physical 0: cores 0 1 2 8 17 18 24 25
      physical 1: cores 0 1 2 8 17 18 24 25
      physical 2: cores 0 1 2 8 17 18 24 25
      physical 3: cores 0 1 2 8 17 18 24 25
   cache size : 24576 KB

From /proc/meminfo
   MemTotal:       529114324 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux Huawei-RH5885 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 10 16:50

SPEC is set to: /home/cpu2006
   Filesystem     Type     Size   Used Avail Use% Mounted on
   /dev/mapper/vg_huaweirh5885-lv_home
                  ext4      80G    20G   56G  27% /home

Additional information from dmidecode:
  Memory:
   32x Samsung M393B1K70CH0-CH9 8 GB 1067 MHz 2 rank
   32x Samsung M393B1K70DH0-YH9 8 GB 1067 MHz 2 rank

(End of data from sysinfo program)
```

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General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
OMP_NUM_THREADS = "32"

 Binaries compiled on a system with 4xE7-4807 CPU + 512GB
 memory using RHEL6.2
 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
```

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| $SPECfp2006 =$ | 55.9 |
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Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

Continued on next page

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Peak Optimization Flags (Continued)

444.namd: `-xSSE4.2`(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: `-xSSE4.2`(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: `-xSSE4.2`(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: `-xSSE4.2`(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: `-xSSE4.2`(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: `-xSSE4.2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias`

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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

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