Huawei
Tecal RH5885 V2

SPECfp®2006 = 62.5
SPECfp_base2006 = 60.1

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

Software Availability: Oct-2012

Hardware

CPU Name: Intel Xeon E7-8870
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip
CPU(s) orderable: 2,4,8 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
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

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## SPEC CFP2006 Result

**Huawei Tecal RH5885 V2**

**SPECfp2006 =** 62.5  
**SPECfp_base2006 =** 60.1

- **CPU2006 license:** 13  
- **Test sponsor:** Huawei  
- **Tested by:** Huawei  
- **L3 Cache:** 30 MB I+D on chip per chip  
- **System State:** Run level 3 (add definition here)  
- **Other Cache:** None  
- **Base Pointers:** 64-bit  
- **Memory:** 1 TB (64 x 16 GB 2Rx4 PC3L-10600R-9, ECC, running at 1066 MHz)  
- **Peak Pointers:** 32/64-bit  
- **Disk Subsystem:** 1x300 GB SAS, 10K RPM  
- **Other Software:** None  
- **Operating System Notes:** Stack size set to unlimited using "ulimit -s unlimited"  
- **Platform Notes:** BIOS configuration: Intel Hyper-Threading set to Disabled  
  Sysinfo program /root/benchmark/cpu2006/config/sysinfo.rev6818  
  $Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28  
  running on Huawei-RH5885 Tue Oct 16 02:17:28 2012  

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>386</td>
<td>34.8</td>
<td>390</td>
<td>34.4</td>
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<td>45.4</td>
<td>417</td>
<td>46.7</td>
<td>418</td>
<td>46.7</td>
</tr>
</tbody>
</table>

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 /root/benchmark/cpu2006/config/sysinfo.rev6818  
$Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28  
running on Huawei-RH5885 Tue Oct 16 02:17:28 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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Huawei
Tecal RH5885 V2

SPECfp2006 = 62.5
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Hardware Availability: Oct-2012
Software Availability: Oct-2012

Platform Notes (Continued)

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E7- 8870 @ 2.40GHz
   4 "physical id"s (chips)
   40 "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 : 10
      siblings : 10
      physical 0: cores 0 1 2 8 9 16 17 18 24 25
      physical 1: cores 0 1 2 8 9 16 17 18 24 25
      physical 2: cores 0 1 2 8 9 16 17 18 24 25
      physical 3: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 30720 KB

From /proc/meminfo
   MemTotal:       1058611024 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)

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 15 16:10

SPEC is set to: /root/benchmark/cpu2006
   Filesystem    Type    Size  Used Avail Use% Mounted on
   /dev/sda1     ext4   274G  8.0G  252G  4% /root/benchmark

Additional information from dmidecode:
   BIOS American Megatrends Inc. RGPUC-BIOS-V019 09/18/2012
   Memory:
      64x  16 GB
      64x Micron 36KSF2G72PZ-1G4D1 16 GB 1067 MHz 2 rank

(End of data from sysinfo program)
Huawei
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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 = "/root/benchmark/cpu2006/libs/32:/root/benchmark/cpu2006/libs/64"
OMP_NUM_THREADS = "40"

Binaries compiled on a system with 4xE7-8870 CPU + 1024GB 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 -nofor_main
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
SPEC CFP2006 Result

Huawei
Tecal RH5885 V2

SPECfp2006 = 62.5
SPECfp_base2006 = 60.1

CPU2006 license: 13
Test sponsor: Huawei
Tested by: Huawei
Test date: Oct-2012
Hardware Availability: Oct-2012
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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: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel

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Huawei
Tecal RH5885 V2

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CPU2006 license: 13
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Hardware Availability: Oct-2012
Software Availability: Oct-2012

Peak Optimization Flags (Continued)

C++ benchmarks:

- 444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -03(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) -03(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) -03(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) -03(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) -03(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 -03 -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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