# Huawei Tecal RH5885 V2 SPECfp®2006 Result

| SPECfp®2006 = | 43.8 |
| SPECfp_base2006 = | 42.5 |

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>15.9</td>
</tr>
<tr>
<td>416.gamess</td>
<td>14.4</td>
</tr>
<tr>
<td>433.milc</td>
<td>18.0</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>79.1</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>21.1</td>
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<tr>
<td>436.cactusADM</td>
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<tr>
<td>437.leslie3d</td>
<td>150</td>
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<tr>
<td>444.namd</td>
<td>11.1</td>
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<tr>
<td>447.dealII</td>
<td>10.8</td>
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<tr>
<td>450.soplex</td>
<td>23.0</td>
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<tr>
<td>453.povray</td>
<td>15.0</td>
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<tr>
<td>454.calculix</td>
<td>20.7</td>
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<tr>
<td>459.GemsFDTD</td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>18.6</td>
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<tr>
<td>470.lbm</td>
<td>18.0</td>
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<tr>
<td>481.wrf</td>
<td>33.6</td>
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<tr>
<td>482.sphinx3</td>
<td>35.2</td>
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</table>

**Hardware**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E7-4807</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td></td>
</tr>
<tr>
<td>CPU MHz</td>
<td>1867</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 4 chips, 6 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>2.4 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64</td>
</tr>
<tr>
<td>Compiler</td>
<td>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</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
</tbody>
</table>

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Huawei Tecal RH5885 V2

**SPECfp2006 =** 43.8
**SPECfp_base2006 =** 42.5

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**CPU2006 license:** 13  
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**L3 Cache:** 18 MB I+D on chip per chip  
**System State:** Run level 3 (multi-user)

**Other Cache:** None  
**Base Pointers:** 64-bit

**Memory:** 512 GB (64 x 8 GB 2Rx4 PC3-10600R-9, ECC, running at 800 MHz)  
**Peak Pointers:** 32/64-bit

**Disk Subsystem:** 100 GB SSD  
**Other Software:** None

**Other Hardware:** None  
**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

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**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
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<tbody>
<tr>
<td>410.bwaves</td>
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<td>470.lbm</td>
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<td>34.3</td>
<td>568</td>
<td>34.3</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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**Operating System Notes**

Stack size set to unlimited using "ulimit -s unlimited"

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**Platform Notes**

BIOS configuration:
Intel Hyper-Threading set to Disabled  
Sysinfo program /home/cpu2006/config/sysinfo.rev6800  
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3  

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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SPECfp2006 = 43.8
SPECfp_base2006 = 42.5

CPU2006 license: 13
Test sponsor: Huawei
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Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E7-4807 @ 1.87GHz
  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 18 24 25
  physical 1: cores 0 1 2 18 24 25
  physical 2: cores 2 8 9 16 17 18
  physical 3: cores 0 1 2 18 24 25
  cache size : 18432 KB

From /proc/meminfo
  MemTotal:      529115232 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 9 09:02

SPEC is set to: /home/cpu2006
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /dev/mapper/vg_huaweirh5885-lv_home  ext4  80G  19G  57G  25% /home

Additional information from dmidecode:
  Memory:
    32x Samsung M393B1K70CH0-C9H 8 GB 800 MHz 2 rank
    32x Samsung M393B1K70DH0-YH9 8 GB 800 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 = "24"

Binaries compiled on a system with 4xE7-4807 CPU + 512 GB
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
  -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
Huawei
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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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**SPEC CFP2006 Result**

| SPECfp2006 = | 43.8 |
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Tested by: Huawei

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**Peak Optimization Flags (Continued)**

**C++ benchmarks:**

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) -unroll14 -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) -unroll12
-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) -unroll12
-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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