Huawei
Tecal RH5885 V2

SPECint\_rate2006 = 1150
SPECint\_rate\_base2006 = 1100

CPU2006 license: 3175
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>Rate</th>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
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</thead>
<tbody>
<tr>
<td>perlbench</td>
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<td>bzip2</td>
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<td>635</td>
<td>606</td>
</tr>
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<td>gcc</td>
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<td>mcf</td>
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<td>gobmk</td>
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<tr>
<td>hmmer</td>
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<td>1650</td>
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<td>sjeng</td>
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<tr>
<td>libquantum</td>
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<td>6920</td>
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</tr>
<tr>
<td>h264ref</td>
<td>80</td>
<td>1330</td>
<td></td>
</tr>
<tr>
<td>omnetpp</td>
<td>80</td>
<td>630</td>
<td>592</td>
</tr>
<tr>
<td>astar</td>
<td>80</td>
<td>627</td>
<td></td>
</tr>
<tr>
<td>xalancbmk</td>
<td>80</td>
<td>1140</td>
<td></td>
</tr>
</tbody>
</table>

Hardware

- CPU Name: Intel Xeon E7-4870
- 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, 2 threads/core
- 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
- L3 Cache: 30 MB I+D on chip per chip
- Other Cache: None
- Memory: 1 TB (64 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
- Disk Subsystem: 1 x 300 GB SAS, 10K RPM
- Other Hardware: None

Software

- Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
- Compiler: C++: Version 13.0.0.079 of Intel C++ Studio XE for Linux
- Auto Parallel: No
- File System: ext4
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V9.01
## SPEC CINT2006 Result

### Huawei
**Tecal RH5885 V2**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
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<tbody>
<tr>
<td>1150</td>
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**CPU2006 license:** 3175  
**Test sponsor:** Huawei  
**Tested by:** Huawei  
**Test date:** Oct-2012  
**Hardware Availability:** Oct-2012  
**Software Availability:** Oct-2012

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
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<td>473.astar</td>
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<td>483.xalancbmk</td>
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<td>1140</td>
<td>80</td>
<td>483</td>
<td>1140</td>
<td>483</td>
</tr>
</tbody>
</table>

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

### Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

### Operating System Notes

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

### Platform Notes

BIOS configuration:
Set Power Efficiency Mode to Performance
Sysinfo program /root/benchmark/cpu2006/config/sysinfo_rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28
running on Huawei-RH5885 Wed Oct 24 20:00:07 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

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E7- 4870 @ 2.40GHz
  4 "physical id"s (chips)
  80 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

Continued on next page
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Platform Notes (Continued)

cpu cores : 10
siblings : 20
  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: 1058605968 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 24 19:55

SPEC is set to: /root/benchmark/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 274G 189G 72G 73% /root/benchmark

Additional information from dmidecode:
  BIOS American Megatrends Inc. RGPUC-BIOS-V018 08/29/2012
  Memory:
    64x 16 GB
    64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank

(End of data from sysinfo program)
  Descriptions about memory generated by sysinfo are not correct, only 64 DIMMs are installed not 128, see descriptions below.
  Memory:
    64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/benchmark/cpu2006/libs/32:/root/benchmark/cpu2006/libs/64"

Binaries compiled on a system with 4x E7-4807 CPU + 512 GB
memory using RHEL6.2
Transparent Huge Pages enabled with:
Huawei Tecal RH5885 V2

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General Notes (Continued)

- echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
- Filesystem page cache cleared with:
  - echo 1>/proc/sys/vm/drop_caches
- runspec command invoked through numactl i.e.:
  - numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
- icc -m32

C++ benchmarks:
- icpc -m32

Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
- -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
- -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
- -Wl,-z,muldefs -L/root/benchmark/cpu2006/smartheap -lsmartheap

Base Other Flags

C benchmarks:
- 403.gcc -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
- icc -m32
- 400.perlbench: icc -m64

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Peak Compiler Invocation (Continued)

401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pas 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pas 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

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Peak Optimization Flags (Continued)

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/root/benchmark/cpu2006/smartheap -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revF.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revF.xml
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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