## Huawei CH242 v3

**SPECint\_rate2006 = 2050**

**SPECint\_rate\_base2006 = 1990**

### Hardware

<table>
<thead>
<tr>
<th><strong>CPU</strong></th>
<th><strong>Software</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)</td>
</tr>
<tr>
<td></td>
<td>Version 14.0.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td></td>
<td>Compiler: C++</td>
</tr>
<tr>
<td></td>
<td>File System:</td>
</tr>
<tr>
<td></td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td></td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td></td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td></td>
<td>Other Software: Microquill SmartHeap V10.0</td>
</tr>
<tr>
<td>CPU Name:</td>
<td>CPU Characteristics: Intel Xeon E7-4870 v2</td>
</tr>
<tr>
<td></td>
<td>CPU MHz: Intel Turbo Boost Technology up to 2.90 GHz</td>
</tr>
<tr>
<td></td>
<td>FPU: Integrated</td>
</tr>
<tr>
<td></td>
<td>CPU(s) enabled: 60 cores, 4 chips, 15 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td></td>
<td>CPU(s) orderable: 2.4 chip</td>
</tr>
<tr>
<td></td>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td></td>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
</tr>
<tr>
<td></td>
<td>L3 Cache: 30 MB I+D on chip per chip</td>
</tr>
<tr>
<td></td>
<td>Other Cache: None</td>
</tr>
<tr>
<td></td>
<td>Memory: 256 GB (32 x 8 GB 2Rx4 PC3-10600R-09, ECC)</td>
</tr>
<tr>
<td></td>
<td>Disk Subsystem: 1 X 300 GB SAS 10000RPM</td>
</tr>
</tbody>
</table>

### Software

- Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
- Compiler: C++
- File System: ext4
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V10.0

### CPU2006 license: 3175

Test date: May-2014

Hardware Availability: Jan-2014

Software Availability: Nov-2013

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<thead>
<tr>
<th>CPU Characteristics: Intel Xeon E7-4870 v2</th>
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<td>Other Cache: None</td>
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<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate2006 = 2050</td>
<td></td>
</tr>
</tbody>
</table>

### Test Information

- Test sponsor: Huawei
- Tested by: Huawei
- CPU Name: CPU Name: Intel Xeon E7-4870 v2
- CPU Characteristics: CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
- CPU MHz: 2300
- FPU: Integrated
- CPU(s) enabled: 60 cores, 4 chips, 15 cores/chip, 2 threads/core
- CPU(s) orderable: 2.4 chip
- 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: 256 GB (32 x 8 GB 2Rx4 PC3-10600R-09, ECC)
- Disk Subsystem: 1 X 300 GB SAS 10000RPM
- Other Hardware: None

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Huawei
Huawei CH242 v3

**SPEC CINT2006 Result**

**Copyright 2006-2014 Standard Performance Evaluation Corporation**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>120</td>
<td>735</td>
<td>1590</td>
<td>734</td>
<td>1600</td>
<td>869</td>
<td>1350</td>
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<tr>
<td>401.bzip2</td>
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<td>1146</td>
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<td>1010</td>
<td>1151</td>
<td>1010</td>
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<td>403.gcc</td>
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<td>640</td>
<td>1510</td>
<td>644</td>
<td>1500</td>
<td>643</td>
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<tr>
<td>429.mcf</td>
<td>120</td>
<td>411</td>
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<td>430</td>
<td>2550</td>
<td>432</td>
<td>2530</td>
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<td>445.gobmk</td>
<td>120</td>
<td>794</td>
<td>1590</td>
<td>791</td>
<td>1590</td>
<td>793</td>
<td>1590</td>
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<tr>
<td>456.hmmer</td>
<td>120</td>
<td>389</td>
<td>2880</td>
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<td>390</td>
<td>2870</td>
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</tr>
<tr>
<td>458.sjeng</td>
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<td>927</td>
<td>1570</td>
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<td>927</td>
<td>1570</td>
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</tr>
<tr>
<td>462.libquantum</td>
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<td>175</td>
<td>14200</td>
<td>174</td>
<td>14300</td>
<td>174</td>
<td>14300</td>
<td></td>
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<tr>
<td>471.omnetpp</td>
<td>120</td>
<td>784</td>
<td>957</td>
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<td>957</td>
<td>784</td>
<td>957</td>
<td></td>
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<tr>
<td>473.astar</td>
<td>120</td>
<td>757</td>
<td>1110</td>
<td>756</td>
<td>1110</td>
<td>757</td>
<td>1110</td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>120</td>
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<td>2130</td>
<td>388</td>
<td>2130</td>
<td>389</td>
<td>2130</td>
<td></td>
</tr>
</tbody>
</table>

**Results 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 VMSE LockStep mode disable
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu May 8 15:08:50 2014

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 v2 @ 2.30GHz
  4 "physical id"s (chips)
  120 "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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SPEC int_rate2006 = 2050
SPEC int_rate_base2006 = 1990

CPU2006 license: 3175
Test date: May-2014
Test sponsor: Huawei
Hardware Availability: Jan-2014
Tested by: Huawei
Software Availability: Nov-2013

Platform Notes (Continued)

cpu cores : 15
siblings : 30
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
cache size : 30720 KB

From /proc/meminfo
MemTotal: 264349344 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)

uname -a:
Linux localhost.localdomain 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 May 8 13:22

SPEC is set to: /spec

Additional information from dmidecode:
BIOS American Megatrends Inc. BLISV033 02/27/2014
Memory:
32x8 GB
8x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank
24x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

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
Filesystem page cache cleared with:
echo 1> /proc/sys/vm/drop_caches

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General Notes (Continued)
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/sh -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
   401.bzip2: icc -m64

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<table>
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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Peak Compiler Invocation (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>456.hmmer</td>
<td>icc -m64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>icc -m64</td>
</tr>
</tbody>
</table>

C++ benchmarks:
icpc -m32

Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LINUX</td>
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Peak Optimization Flags

C benchmarks:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-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</td>
</tr>
<tr>
<td>403.gcc</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>429.mcf</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-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</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias</td>
</tr>
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Continued on next page
SPEC CINT2006 Result

Huawei
Huawei CH242 v3

SPECint\_rate2006 = 2050
SPECint\_rate\_base2006 = 1990

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

Test date: May-2014
Hardware Availability: Jan-2014
Software Availability: Nov-2013

Peak Optimization Flags (Continued)

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/sh -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/Intel-ic14.0-official-linux64.20140128.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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