Huawei

**Huawei CH121 V3 (Intel Xeon E5-2670 v3)**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>1010</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>977</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3175

**Test sponsor:** Huawei

**Test date:** Jan-2015

**Hardware Availability:** Sep-2014

**Tested by:** Huawei

**Software Availability:** Nov-2013

### Hardware

- **CPU Name:** Intel Xeon E5-2670 v3
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.10 GHz
- **CPU MHz:** 2300
- **FPU:** Integrated
- **CPU(s) enabled:** 24 cores, 2 chips, 12 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1.2 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 (16 x 16 GB 2Rx4 PC4-2133P-R)
- **Disk Subsystem:** 1 x 500 GB SATA, 7200 RPM
- **Other Hardware:** None

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 6.5 (Santiago)
- **Compiler:** C/C++: Version 14.0.0.080 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 V10.0
Huawei CH121 V3 (Intel Xeon E5-2670 v3)

SPECint_rate2006 = 1010
SPECint_rate_base2006 = 977

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th></th>
<th></th>
<th></th>
<th>Peak</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>624</td>
<td>751</td>
<td>623</td>
<td>753</td>
<td>625</td>
<td>751</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>48</td>
<td>952</td>
<td>487</td>
<td>955</td>
<td>485</td>
<td>953</td>
<td>486</td>
</tr>
<tr>
<td>403.gcc</td>
<td>48</td>
<td>519</td>
<td>745</td>
<td>518</td>
<td>746</td>
<td>518</td>
<td>747</td>
</tr>
<tr>
<td>429.mcf</td>
<td>48</td>
<td>324</td>
<td>1350</td>
<td>320</td>
<td>1370</td>
<td>321</td>
<td>1360</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>768</td>
<td>656</td>
<td>768</td>
<td>655</td>
<td>768</td>
<td>656</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>48</td>
<td>332</td>
<td>1350</td>
<td>322</td>
<td>1390</td>
<td>326</td>
<td>1370</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>48</td>
<td>835</td>
<td>695</td>
<td>836</td>
<td>695</td>
<td>835</td>
<td>695</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>48</td>
<td>106</td>
<td>9370</td>
<td>106</td>
<td>9350</td>
<td>107</td>
<td>9330</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>48</td>
<td>931</td>
<td>1140</td>
<td>936</td>
<td>1130</td>
<td>932</td>
<td>1140</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>543</td>
<td>553</td>
<td>543</td>
<td>553</td>
<td>545</td>
<td>551</td>
</tr>
<tr>
<td>473.astar</td>
<td>48</td>
<td>643</td>
<td>524</td>
<td>641</td>
<td>526</td>
<td>638</td>
<td>528</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>315</td>
<td>1050</td>
<td>314</td>
<td>1050</td>
<td>315</td>
<td>1050</td>
</tr>
</tbody>
</table>

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

Submit Notes

The numacl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numacl 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 Custom
Set Snoop Mode to COD
Set Patrol Scrub to Disable
Baseboard Management Controller used to adjust the fan speed to 100%
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Mon Jan 12 11:26:59 2015

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 E5-2670 v3 @ 2.30GHz
2 "physical id"s (chips)
48 "processors"
Huawei CH121 V3 (Intel Xeon E5-2670 v3)

**SPECint_rate2006 = 1010**

**SPECint_rate_base2006 = 977**

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

**Platform Notes (Continued)**

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 : 12
- siblings : 24
- physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
- physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
- cache size : 15360 KB

From /proc/meminfo
- MemTotal: 264272692 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 Jan 11 23:05
```

SPEC is set to: /spec

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 268G 124G 131G 49% /
```

Additional information from dmidecode:
- BIOS Insyde Corp. 1.13 08/12/2014
- Memory:
  - 8x NO DIMM NO DIMM 3 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 1 rank
  - 8x Samsung M393A2G40DB0-CPB 16 GB 2133 MHz 2 rank

(End of data from sysinfo program)

**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:

Continued on next page
Huawei CH121 V3 (Intel Xeon E5-2670 v3)

SPECint_rate2006 = 1010
SPECint_rate_base2006 = 977

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

General Notes (Continued)

```
echo 1>/proc/sys/vm/drop_caches
runcmd command invoked through numactl i.e.: 
numactl --interleave=all runspec <etc>
The Huawei CH121 V3 and Huawei CH222 V3
are electronically equivalent.
The results have been measured on a Huawei CH121 V3 model
```

Base Compiler Invocation

C benchmarks:
```bash
icc -m32
```

C++ benchmarks:
```bash
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:
```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

C++ benchmarks:
```bash
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:
```bash
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```bash
icc -m32
```
Huawei

Huawei CH121 V3 (Intel Xeon E5-2670 v3)

SPECint_rate2006 = 1010
SPECint_rate_base2006 = 977

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

Test date: Jan-2015
Hardware Availability: Sep-2014
Software Availability: Nov-2013

Peak Compiler Invocation (Continued)

400.perlbench: icc -m64
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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
   -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
   -auto-ilp32

401.bzip2: -xCORE-AVX2(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: basepeak = yes
429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
   -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
   -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
   -unroll4 -auto-ilp32

Continued on next page
Huawei CH121 V3 (Intel Xeon E5-2670 v3)

**SPECint_rate2006 = 1010**

**SPECint_rate_base2006 = 977**

**CPU2006 license:** 3175
**Test date:** Jan-2015
**Test sponsor:** Huawei
**Hardware Availability:** Sep-2014
**Tested by:** Huawei
**Software Availability:** Nov-2013

Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(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
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.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-HASWELL-V1.4.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Feb 10 18:30:05 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 10 February 2015.