Huawei

Huawei CH222 V3 (Intel Xeon E5-2658A v3)

SPECint®_rate2006 = 981
SPECint_rate_base2006 = 950

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

CPU Name: Intel Xeon E5-2658A v3
Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
CPU MHz: 2200
Auto Parallel: No
FPU: Integrated
File System: ext4
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
System State: Run level 3 (multi-user)
CPU(s) orderable: 1,2 chip
Base Pointers: 32-bit
Primary Cache: 32 KB I + 32 KB D on chip per core
Peak Pointers: 32/64-bit
Secondary Cache: 256 KB I+D on chip per core
Other Cache: None
L3 Cache: 30 MB I+D on chip per chip
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Other Software: Microquill SmartHeap V10.0
Disk Subsystem: 1 x 500 GB SATA, 7200 RPM

Software

Hardware
Huawei

Huawei CH222 V3 (Intel Xeon E5-2658A v3)

SPECint_rate2006 = 981
SPECint_rate_base2006 = 950

Results Table

<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>Copies</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>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>48</td>
<td>645</td>
<td>727</td>
<td>645</td>
<td>727</td>
<td>647</td>
<td>724</td>
<td>48</td>
<td>531</td>
<td>884</td>
<td>532</td>
<td>881</td>
<td>530</td>
<td>885</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>48</td>
<td>988</td>
<td>469</td>
<td>987</td>
<td>469</td>
<td>983</td>
<td>471</td>
<td>48</td>
<td>943</td>
<td>491</td>
<td>939</td>
<td>493</td>
<td>943</td>
<td>491</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>48</td>
<td>529</td>
<td>730</td>
<td>530</td>
<td>729</td>
<td>527</td>
<td>733</td>
<td>48</td>
<td>529</td>
<td>730</td>
<td>530</td>
<td>729</td>
<td>527</td>
<td>733</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>48</td>
<td>320</td>
<td>1330</td>
<td>328</td>
<td>1330</td>
<td>328</td>
<td>1340</td>
<td>48</td>
<td>329</td>
<td>1330</td>
<td>328</td>
<td>1330</td>
<td>328</td>
<td>1330</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>798</td>
<td>631</td>
<td>798</td>
<td>631</td>
<td>798</td>
<td>631</td>
<td>48</td>
<td>780</td>
<td>646</td>
<td>779</td>
<td>644</td>
<td>779</td>
<td>647</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>48</td>
<td>337</td>
<td>1330</td>
<td>336</td>
<td>1330</td>
<td>334</td>
<td>1340</td>
<td>48</td>
<td>329</td>
<td>1360</td>
<td>331</td>
<td>1350</td>
<td>328</td>
<td>1360</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>48</td>
<td>869</td>
<td>668</td>
<td>869</td>
<td>669</td>
<td>869</td>
<td>669</td>
<td>48</td>
<td>840</td>
<td>692</td>
<td>840</td>
<td>692</td>
<td>841</td>
<td>691</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>48</td>
<td>977</td>
<td>1090</td>
<td>967</td>
<td>1100</td>
<td>957</td>
<td>1110</td>
<td>48</td>
<td>955</td>
<td>1110</td>
<td>924</td>
<td>1150</td>
<td>941</td>
<td>1130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>551</td>
<td>544</td>
<td>552</td>
<td>543</td>
<td>551</td>
<td>544</td>
<td>48</td>
<td>528</td>
<td>568</td>
<td>530</td>
<td>566</td>
<td>530</td>
<td>566</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>48</td>
<td>654</td>
<td>515</td>
<td>653</td>
<td>516</td>
<td>659</td>
<td>511</td>
<td>48</td>
<td>654</td>
<td>515</td>
<td>653</td>
<td>516</td>
<td>659</td>
<td>511</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>322</td>
<td>1030</td>
<td>321</td>
<td>1030</td>
<td>321</td>
<td>1030</td>
<td>48</td>
<td>322</td>
<td>1030</td>
<td>321</td>
<td>1030</td>
<td>321</td>
<td>1030</td>
<td></td>
<td></td>
<td></td>
<td></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 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
$Revision: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Mar 11 05:11:21 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 E5-2658A v3 @ 2.20GHz
2 "physical id"s (chips)
48 "processors"
SPECint_rate2006 = 981
SPECint_rate_base2006 = 950

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 Mar 11 05:00

SPEC is set to: /spec
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /dev/sda1   ext4   268G  154G  100G  61% /

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

Huawei CH222 V3 (Intel Xeon E5-2658A v3)

SPECint_rate2006 = 981
SPECint_rate_base2006 = 950

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

General Notes (Continued)

- echo 1 > /proc/sys/vm/drop_caches
- runspec 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:
  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:
  -xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch
  -opt-mem-layout-trans=3

C++ benchmarks:
  -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:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

Continued on next page
# SPEC CINT2006 Result

## Huawei

Huawei CH222 V3 (Intel Xeon E5-2658A v3)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>981</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>950</td>
</tr>
</tbody>
</table>

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

Huawei CH222 V3 (Intel Xeon E5-2658A v3)

SPECint_rate2006 = 981
SPECint_rate_base2006 = 950

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

Test date: Mar-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2013

Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes
464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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)
-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
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 Wed Apr 8 11:02:07 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 April 2015.