Huawei

Huawei CH220 V3 (Intel Xeon E5-2680 v3)

SPECint\textregistered_rate2006 = 1080
SPECint\textunderscore rate\textunderscore base2006 = 1040

Huawei

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

Hardware

| SPECint\textunderscore rate2006 | 1080 |
| SPECint\textunderscore rate\textunderscore base2006 | 1040 |

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64
Compiler: C++: Version 15.0.0.090 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
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>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>48</td>
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<td>783</td>
<td>601</td>
<td>781</td>
<td>602</td>
<td>779</td>
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<td>401.bzip2</td>
<td>48</td>
<td>894</td>
<td>518</td>
<td>898</td>
<td>516</td>
<td>902</td>
<td>513</td>
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<tr>
<td>403.gcc</td>
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<td>481</td>
<td>803</td>
<td>478</td>
<td>808</td>
<td>480</td>
<td>805</td>
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<tr>
<td>429.mcf</td>
<td>48</td>
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<td>1380</td>
<td>315</td>
<td>1390</td>
<td>314</td>
<td>1400</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>48</td>
<td>697</td>
<td>722</td>
<td>696</td>
<td>723</td>
<td>697</td>
<td>722</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>48</td>
<td>308</td>
<td>1460</td>
<td>301</td>
<td>1490</td>
<td>305</td>
<td>1470</td>
</tr>
<tr>
<td>458.sjeng</td>
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<td>760</td>
<td>764</td>
<td>761</td>
<td>763</td>
<td>763</td>
<td>762</td>
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<tr>
<td>462.libquantum</td>
<td>48</td>
<td>102</td>
<td>9780</td>
<td>101</td>
<td>9870</td>
<td>101</td>
<td>9860</td>
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<tr>
<td>464.h264ref</td>
<td>48</td>
<td>855</td>
<td>1240</td>
<td>827</td>
<td>1280</td>
<td>861</td>
<td>1230</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>48</td>
<td>534</td>
<td>562</td>
<td>536</td>
<td>560</td>
<td>535</td>
<td>560</td>
</tr>
<tr>
<td>473.astar</td>
<td>48</td>
<td>590</td>
<td>571</td>
<td>590</td>
<td>571</td>
<td>595</td>
<td>566</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>48</td>
<td>307</td>
<td>1080</td>
<td>305</td>
<td>1080</td>
<td>304</td>
<td>1090</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 /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Sat Dec 27 15:35:01 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 E5-2680 v3 @ 2.50GHz
2 "physical id"s (chips) 48 "processors"

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CPU2006 license: 3175
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Tested by: Huawei
Test date: Dec-2014
Hardware Availability: Sep-2014
Software Availability: Jun-2014

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 : 6
  siblings : 12
  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: 263717272 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux Server"
    VERSION="7.0 (Maipo)"
    ID="rhel"
    ID_LIKE="fedora"
    VERSION_ID="7.0"
    PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
    ANSI_COLOR="0;31"
    CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
  redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
  system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
  system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
  Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

runelevel 3 Dec 26 17:41

SPEC is set to: /spec15
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /devmapper/rhel-root  ext4  241G  114G  115G  50% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SM BIOS" standard.

BIOS Insyde Corp. 1.18 09/17/2014
Memory:
  8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz
  8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Huawei CH220 V3 (Intel Xeon E5-2680 v3)  

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**Test sponsor:** Huawei  
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### General Notes

Environment variables set by runspec before the start of the run:  
```
LD_LIBRARY_PATH = ""/spec15/libs/32:/spec15/libs/64:/spec15/sh"
```

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1>/proc/sys/vm/drop_caches  
runcspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

### Base Compiler Invocation

C benchmarks:  
```
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

C++ benchmarks:  
```
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

### Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32  
- 462.libquantum: -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
```
Huawei

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Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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

C++ benchmarks:
  icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -xCORE-AVX2 -ipo -O3 -no-prec-div

  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

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**SPECint_rate2006 =** 1080  
**SPECint_rate_base2006 =** 1040

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<tr>
<td>Software Availability:</td>
<td>Jun-2014</td>
</tr>
</tbody>
</table>

**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-ic15.0-official-linux64.html  
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.2.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml  
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.2.xml

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For other inquiries, please contact webmaster@spec.org.

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