SPEC® CINT2006 Result
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Huawei

Huawei CH220 (Intel Xeon E5-2680 v2)

$SPECint®2006 =$ 61.8

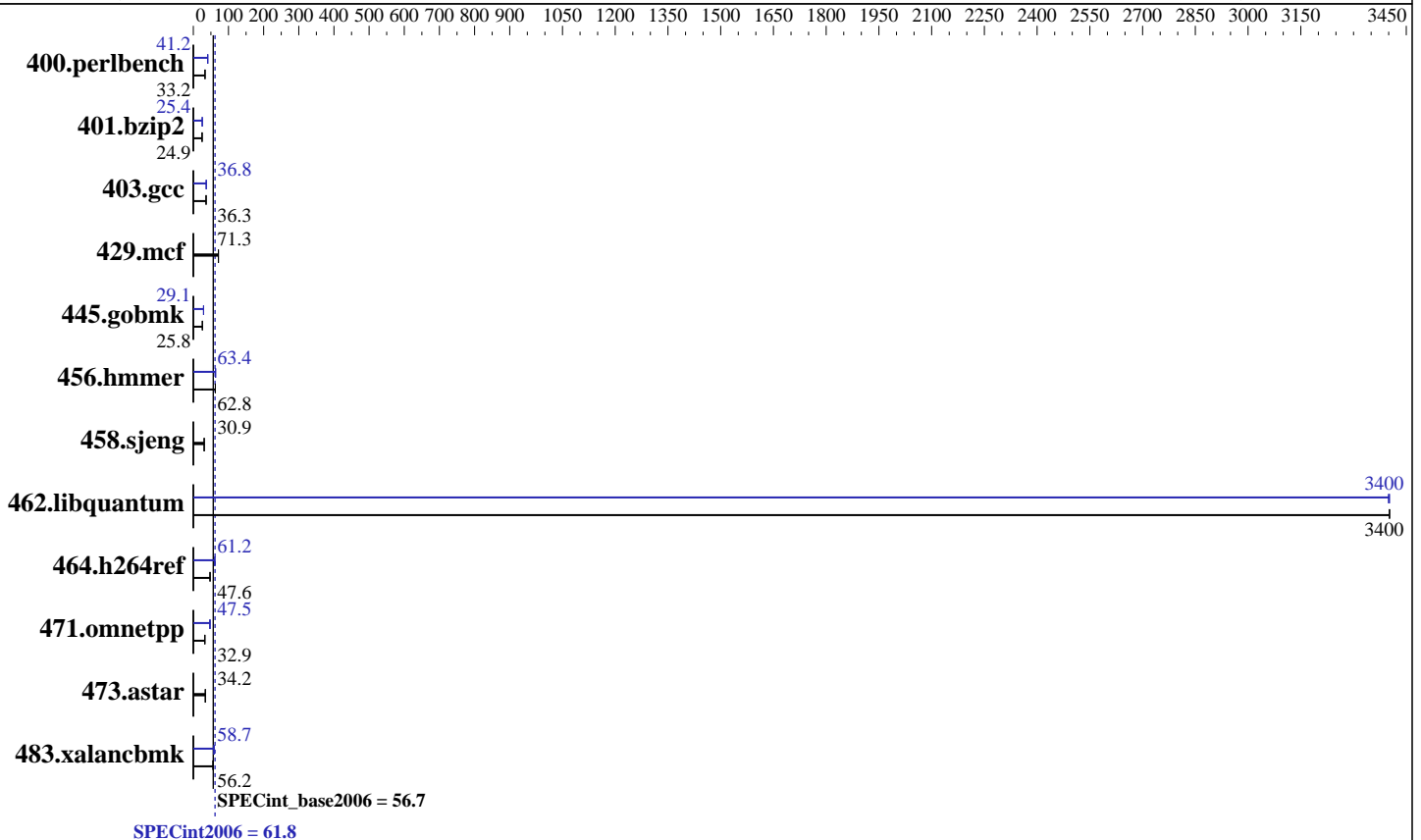$SPECint\_base2006 =$ 56.7

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

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

Benchmark results (bar chart):

Benchmark	Peak	Base
400.perlbench	41.2	33.2
401.bzip2	25.4	24.9
403.gcc	36.8	36.3
429.mcf		71.3
445.gobmk	29.1	25.8
456.hmmer	63.4	62.8
458.sjeng		30.9
462.libquantum	3400	3400
464.h264ref	61.2	47.6
471.omnetpp	47.5	32.9
473.astar		34.2
483.xalancbmk	58.7	56.2

SPECint_base2006 = 56.7

SPECint2006 = 61.8

Hardware

CPU Name: Intel Xeon E5-2680 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip
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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 x 300 GB SAS, 10000 RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
2.6.32-431.el6.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

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Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	294	33.2	**294**	**33.2**	294	33.3	**237**	**41.2**	237	41.2	241	40.6
401.bzip2	388	24.9	**387**	**24.9**	387	24.9	**380**	**25.4**	380	25.4	379	25.5
403.gcc	**222**	**36.3**	222	36.3	222	36.2	219	36.8	219	36.8	**219**	**36.8**
429.mcf	**128**	**71.3**	128	71.2	127	71.6	**128**	**71.3**	128	71.2	127	71.6
445.gobmk	407	25.8	407	25.8	**407**	**25.8**	**360**	**29.1**	360	29.1	361	29.1
456.hmmer	149	62.8	**149**	**62.8**	149	62.5	147	63.5	149	62.8	**147**	**63.4**
458.sjeng	391	30.9	391	30.9	**391**	**30.9**	391	30.9	391	30.9	**391**	**30.9**
462.libquantum	6.09	3400	6.09	3400	**6.09**	**3400**	**6.09**	**3400**	6.10	3400	6.09	3400
464.h264ref	466	47.5	465	47.6	**465**	**47.6**	362	61.2	**362**	**61.2**	362	61.1
471.omnetpp	190	32.9	192	32.5	**190**	**32.9**	134	46.6	**132**	**47.5**	131	47.8
473.astar	205	34.3	206	34.1	**205**	**34.2**	205	34.3	206	34.1	**205**	**34.2**
483.xalancbmk	122	56.7	123	56.0	**123**	**56.2**	117	59.1	**118**	**58.7**	118	58.5

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

Operating System Notes

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

Platform Notes

```
BIOS configuration:
Set Power Efficiency Mode to Custom
Baseboard Management Controller used to adjust the fan speed to 100%
Set Hyper-Threading to Disabled
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Sat Mar  1 15:40:08 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 v2 @ 2.80GHz
      2 "physical id"s (chips)
      20 "processors"
   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 : 10
      siblings  : 10
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12
```

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Platform Notes (Continued)

```
      cache size : 25600 KB

  From /proc/meminfo
     MemTotal:        264478184 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)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  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 1 05:06

  SPEC is set to: /spec
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda2       ext4  254G   14G  228G   6% /

  Additional information from dmidecode:
    Memory:
     16x Samsung M393B2G70DB0-CMA 16 GB 1867 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"
OMP_NUM_THREADS = "20"

 Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory
 using RHEL 6.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:
```
     icc  -m64
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
    icpc -m64

Base Portability Flags

```
        400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
           401.bzip2: -DSPEC_CPU_LP64
             403.gcc: -DSPEC_CPU_LP64
             429.mcf: -DSPEC_CPU_LP64
          445.gobmk: -DSPEC_CPU_LP64
          456.hmmer: -DSPEC_CPU_LP64
           458.sjeng: -DSPEC_CPU_LP64
      462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
         464.h264ref: -DSPEC_CPU_LP64
         471.omnetpp: -DSPEC_CPU_LP64
            473.astar: -DSPEC_CPU_LP64
       483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
    -Wl,-z,muldefs -L/smartheap -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m64

    400.perlbench: icc -m32

      445.gobmk: icc -m32

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Peak Compiler Invocation (Continued)

    464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
    `icpc -m32`

      473.astar: `icpc -m64`

Peak Portability Flags

    400.perlbench: `-DSPEC_CPU_LINUX_IA32`
        401.bzip2: `-DSPEC_CPU_LP64`
         403.gcc: `-DSPEC_CPU_LP64`
        429.mcf: `-DSPEC_CPU_LP64`
    456.hmmer: `-DSPEC_CPU_LP64`
     458.sjeng: `-DSPEC_CPU_LP64`
  462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
      473.astar: `-DSPEC_CPU_LP64`
  483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

    400.perlbench: `-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 -ansi-alias`

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

        403.gcc: `-xAVX -ipo -O3 -no-prec-div -inline-calloc`
           `-opt-malloc-options=3 -auto-ilp32`

        429.mcf: `basepeak = yes`

      445.gobmk: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)`
           `-ansi-alias`

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

       458.sjeng: `basepeak = yes`

  462.libquantum: `-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`
           `-auto-p32`

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Peak Optimization Flags (Continued)

464.h264ref: `-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`

C++ benchmarks:

471.omnetpp: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-opt-ra-region-strategy=block          -ansi-alias`
`-Wl,-z,muldefs -L/smartheap -lsmartheap`

473.astar: `basepeak = yes`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`
`-Wl,-z,muldefs -L/smartheap -lsmartheap`

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-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

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

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