SPEC® CINT2006 Result
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Huawei

Huawei CH222 (Intel Xeon E5-2670 v2)

SPECint®2006 = 57.7
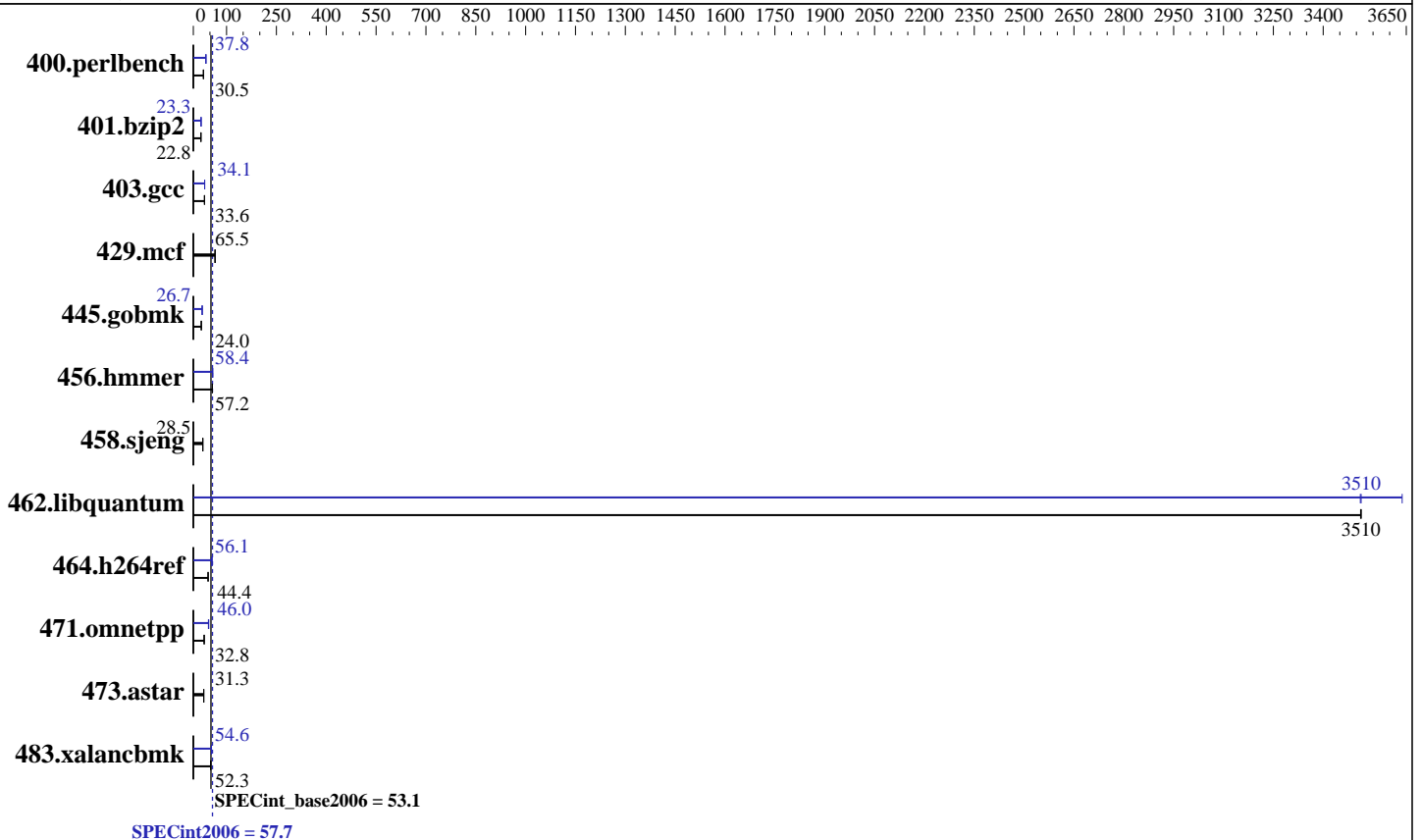
SPECint_base2006 = 53.1

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

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

Benchmark results (bars):
- 400.perlbench: 37.8 / 30.5
- 401.bzip2: 23.3 / 22.8
- 403.gcc: 34.1 / 33.6
- 429.mcf: 65.5
- 445.gobmk: 26.7 / 24.0
- 456.hmmer: 58.4 / 57.2
- 458.sjeng: 28.5
- 462.libquantum: 3510 / 3510
- 464.h264ref: 56.1 / 44.4
- 471.omnetpp: 46.0 / 32.8
- 473.astar: 31.3
- 483.xalancbmk: 54.6 / 52.3

SPECint_base2006 = 53.1

SPECint2006 = 57.7

Hardware

CPU Name:	Intel Xeon E5-2670 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
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	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**321**	**30.5**	320	30.5	321	30.4	**259**	**37.8**	258	37.8	259	37.8
401.bzip2	423	22.8	423	22.8	**423**	**22.8**	**415**	**23.3**	415	23.3	414	23.3
403.gcc	240	33.5	239	33.7	**239**	**33.6**	236	34.1	**236**	**34.1**	236	34.1
429.mcf	**139**	**65.5**	139	65.4	139	65.6	**139**	**65.5**	139	65.4	139	65.6
445.gobmk	437	24.0	**437**	**24.0**	438	24.0	394	26.6	**394**	**26.7**	393	26.7
456.hmmer	**163**	**57.2**	162	57.5	163	57.2	160	58.4	**160**	**58.4**	162	57.6
458.sjeng	425	28.5	**424**	**28.5**	424	28.5	425	28.5	**424**	**28.5**	424	28.5
462.libquantum	5.90	3510	**5.90**	**3510**	5.90	3510	5.90	3510	**5.90**	**3510**	5.70	3640
464.h264ref	499	44.4	**498**	**44.4**	497	44.5	395	56.1	395	56.0	**395**	**56.1**
471.omnetpp	193	32.3	**191**	**32.8**	190	32.8	138	45.4	135	46.3	**136**	**46.0**
473.astar	223	31.5	**224**	**31.3**	225	31.3	223	31.5	**224**	**31.3**	225	31.3
483.xalancbmk	132	52.3	**132**	**52.3**	132	52.4	**126**	**54.6**	126	54.6	126	54.7

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%
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost Thu Jul 24 08:46:45 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 E5-2670 v2 @ 2.50GHz
      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
   cache size : 25600 KB
```

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Platform Notes (Continued)

```
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 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 Jul 23 19:25

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       ext4  272G  102G  156G  40% /

Additional information from dmidecode:
  Memory:
    4x Hynix HMT42GR7AFR4C-RD 16 GB 1867 MHz 2 rank
    12x 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-linux64.20111122.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-linux64.20111122.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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