SPEC® CINT2006 Result
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Huawei

Huawei CH220 V3 (Intel Xeon E5-2609 v3)

$SPECint®2006 =$ 33.2
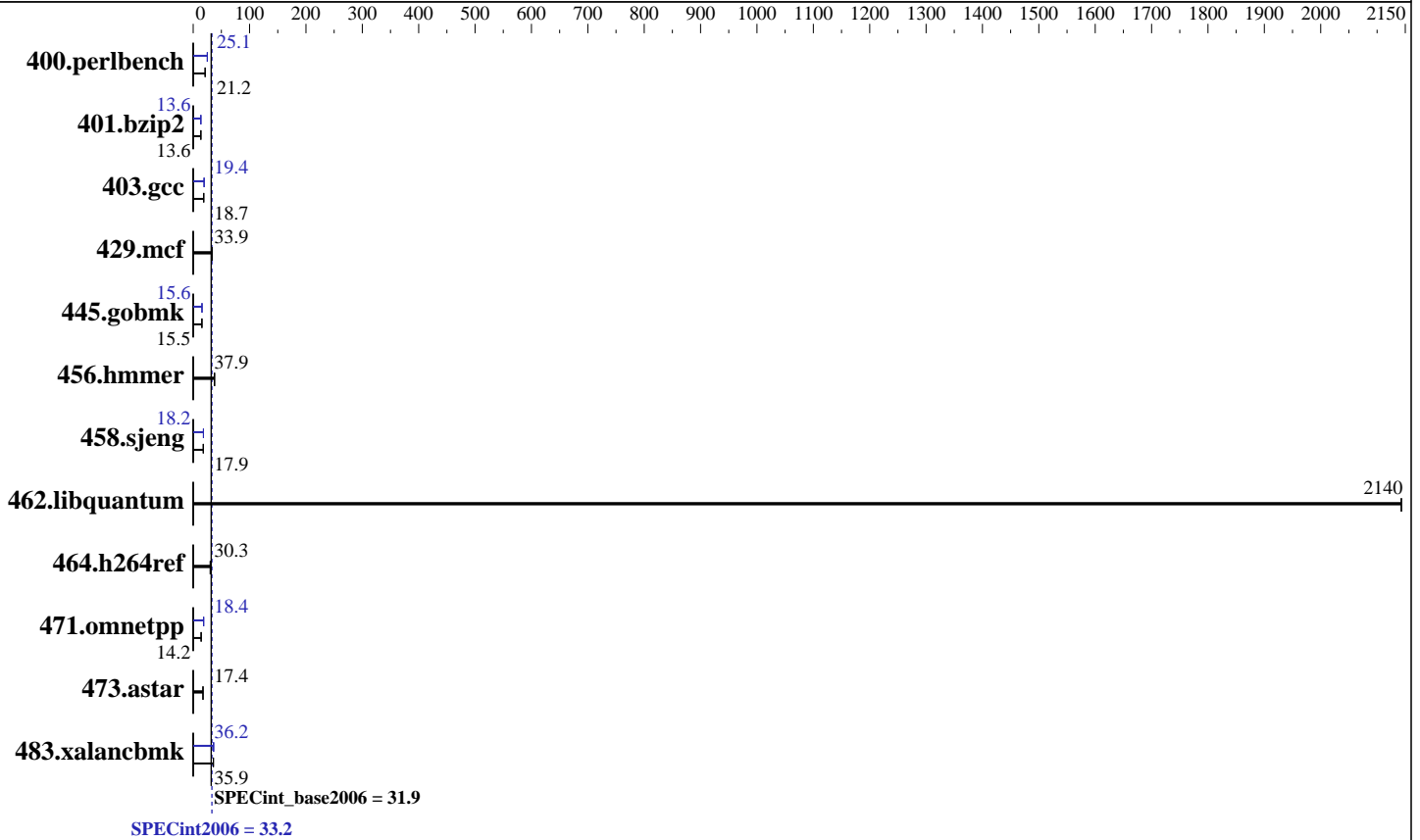
$SPECint\_base2006 =$ 31.9

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

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

Benchmark results (base / peak):

- 400.perlbench: 25.1 / 21.2
- 401.bzip2: 13.6 / 13.6
- 403.gcc: 19.4 / 18.7
- 429.mcf: 33.9
- 445.gobmk: 15.6 / 15.5
- 456.hmmer: 37.9
- 458.sjeng: 18.2 / 17.9
- 462.libquantum: 2140
- 464.h264ref: 30.3
- 471.omnetpp: 18.4 / 14.2
- 473.astar: 17.4
- 483.xalancbmk: 36.2 / 35.9

SPECint_base2006 = 31.9

SPECint2006 = 33.2

Hardware

CPU Name:	Intel Xeon E5-2609 v3
CPU Characteristics:	
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	1 x 300 GB SAS, 10000RPM
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 14.0.0.080 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 V10.0

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	**460**	**21.2**	460	21.3	460	21.2	389	25.1	**390**	**25.1**	391	25.0
401.bzip2	711	13.6	711	13.6	**711**	**13.6**	711	13.6	711	13.6	**711**	**13.6**
403.gcc	430	18.7	**430**	**18.7**	432	18.6	**415**	**19.4**	415	19.4	415	19.4
429.mcf	269	34.0	**269**	**33.9**	269	33.9	269	34.0	**269**	**33.9**	269	33.9
445.gobmk	678	15.5	679	15.4	**678**	**15.5**	671	15.6	672	15.6	**671**	**15.6**
456.hmmer	**246**	**37.9**	247	37.7	246	37.9	**246**	**37.9**	247	37.7	246	37.9
458.sjeng	677	17.9	**674**	**17.9**	674	17.9	666	18.2	666	18.2	**666**	**18.2**
462.libquantum	9.67	2140	9.67	2140	**9.67**	**2140**	9.67	2140	9.67	2140	**9.67**	**2140**
464.h264ref	729	30.3	733	30.2	**730**	**30.3**	729	30.3	733	30.2	**730**	**30.3**
471.omnetpp	438	14.3	**440**	**14.2**	449	13.9	331	18.9	341	18.3	**340**	**18.4**
473.astar	**403**	**17.4**	403	17.4	404	17.4	**403**	**17.4**	403	17.4	404	17.4
483.xalancbmk	**192**	**35.9**	192	35.8	192	35.9	**191**	**36.2**	191	36.2	191	36.2

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

Submit Notes

The config file option 'submit' was used.

Operating System Notes

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

Platform Notes

```
    BIOS configuration:
    Set Early Snoop to Disable
    Sysinfo program /spec/config/sysinfo.rev6818
    $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
    running on localhost Mon Sep 22 11:47:05 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 E5-2609 v3 @ 1.90GHz
          2 "physical id"s (chips)
          12 "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 : 6
          siblings  : 6
```
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Platform Notes (Continued)

```
      physical 0: cores 0 1 2 3 4 5
      physical 1: cores 0 1 2 3 4 5
    cache size : 15360 KB

  From /proc/meminfo
    MemTotal:       264278468 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 Sep 22 11:41

  SPEC is set to: /spec
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext4  266G   50G  203G  20% /

  Additional information from dmidecode:
    BIOS Insyde Corp. 1.18 09/17/2014
    Memory:
      8x Samsung M393A2G40DB0-CPB 16 GB 1600 MHz 1 rank
      8x Samsung M393A2G40DB0-CPB 16 GB 1600 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,1,0"
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"
OMP_NUM_THREADS = "12"

 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
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

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Base Compiler Invocation

C benchmarks:
        icc -m64

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:
        -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
        -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
        -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `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
      464.h264ref: -DSPEC_CPU_LP64
        473.astar: -DSPEC_CPU_LP64
     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)
                   -opt-prefetch -ansi-alias

        401.bzip2: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
                   -opt-malloc-options=3 -auto-ilp32

          429.mcf: basepeak = yes

        445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                   -ansi-alias

       456.hmmer: basepeak = yes

        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
```

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)
-opt-ra-region-strategy=block   -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-ansi-alias -Wl,-z,muldefs -L/sh -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-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.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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