SPEC® CINT2006 Result
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Huawei

Huawei CH222 (Intel Xeon E5-2643 v2)

$SPECint®2006 =$ 63.7

$SPECint\_base2006 =$ 59.0

CPU2006 license: 3175	**Test date:** Aug-2014
Test sponsor: Huawei	**Hardware Availability:** Sep-2013
Tested by: Huawei	**Software Availability:** Nov-2013

Benchmark results (blue = peak, black = base):

- 400.perlbench: 43.5 / 35.0
- 401.bzip2: 26.8 / 26.3
- 403.gcc: 38.9 / 38.4
- 429.mcf: 74.1
- 445.gobmk: 30.7 / 28.9
- 456.hmmer: 67.2 / 66.4
- 458.sjeng: 32.6
- 462.libquantum: 2770 / 2690
- 464.h264ref: 64.5 / 55.3
- 471.omnetpp: 49.0 / 34.3
- 473.astar: 36.1
- 483.xalancbmk: 62.6 / 59.3

SPECint_base2006 = 59.0

SPECint2006 = 63.7

Hardware

CPU Name:	Intel Xeon E5-2643 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3500
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:	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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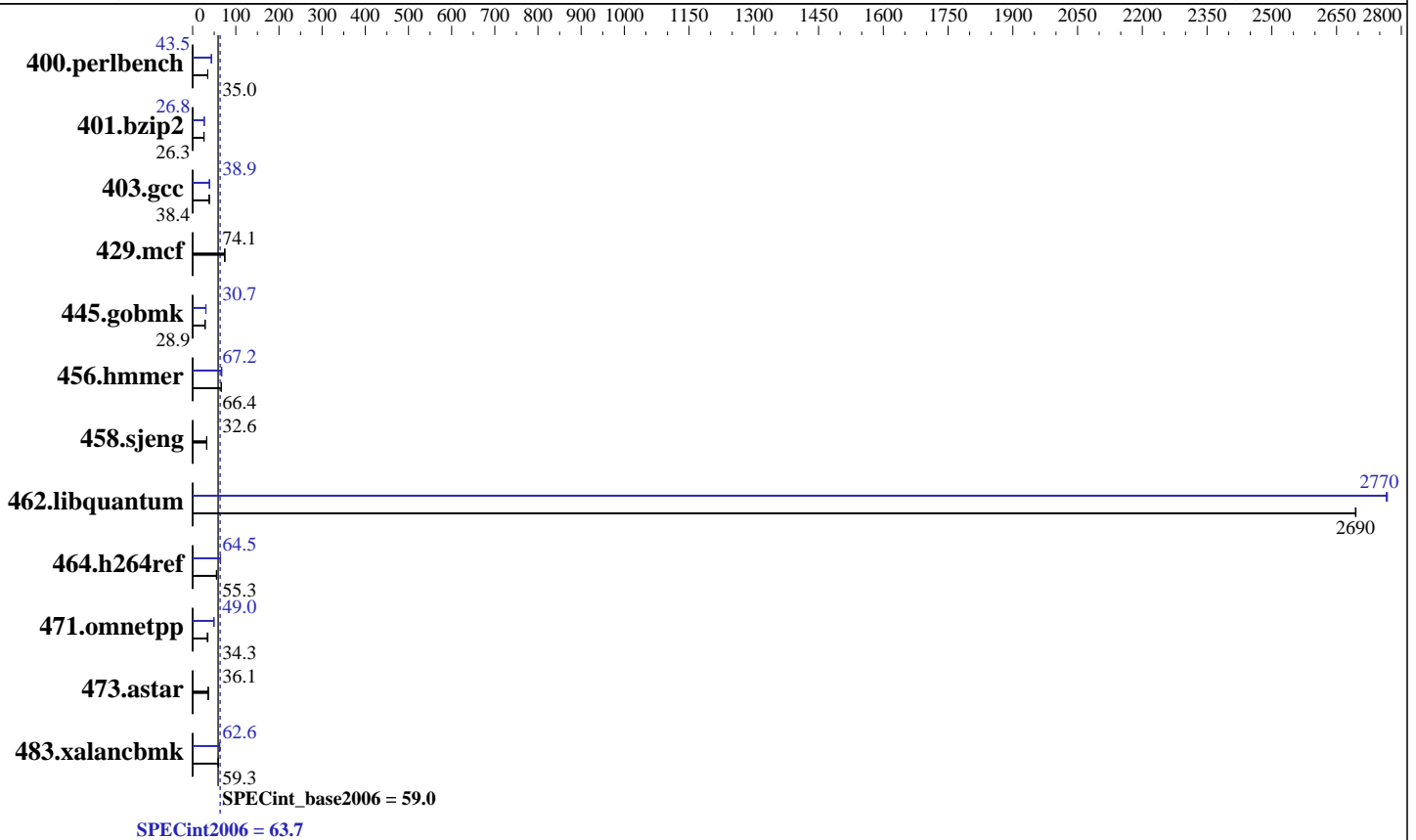|	
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Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	278	35.1	**279**	**35.0**	279	35.0	**224**	**43.5**	224	43.6	225	43.5
401.bzip2	367	26.3	**367**	**26.3**	367	26.3	**360**	**26.8**	360	26.8	360	26.8
403.gcc	**210**	**38.4**	209	38.5	210	38.4	207	38.9	**207**	**38.9**	206	39.0
429.mcf	**123**	**74.1**	122	74.9	123	74.1	**123**	**74.1**	122	74.9	123	74.1
445.gobmk	363	28.9	**363**	**28.9**	364	28.8	341	30.7	341	30.7	**341**	**30.7**
456.hmmer	141	66.3	140	66.4	**141**	**66.4**	**139**	**67.2**	139	67.0	139	67.3
458.sjeng	371	32.6	371	32.6	**371**	**32.6**	371	32.6	371	32.6	**371**	**32.6**
462.libquantum	7.69	2690	7.69	2690	**7.69**	**2690**	7.49	2770	**7.49**	**2770**	7.49	2770
464.h264ref	**400**	**55.3**	401	55.2	400	55.3	**343**	**64.5**	344	64.4	342	64.7
471.omnetpp	**182**	**34.3**	176	35.4	183	34.2	126	49.7	128	48.9	**127**	**49.0**
473.astar	195	36.0	194	36.2	**194**	**36.1**	195	36.0	194	36.2	**194**	**36.1**
483.xalancbmk	117	59.1	115	60.0	**116**	**59.3**	**110**	**62.6**	111	62.4	110	62.6

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
Set Hyper-Threading to Disabled
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 RHEL Sat Aug  9 18:45:54 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 E5-2643 v2 @ 3.50GHz
      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
      physical 0: cores 2 3 4 8 9 10
      physical 1: cores 2 3 4 8 9 10
```

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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 RHEL 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 Aug 7 20:44

  SPEC is set to: /spec
     Filesystem      Type   Size   Used Avail Use% Mounted on
     /dev/sda2       ext4   265G   20G   232G   8% /

  Additional information from dmidecode:
    Memory:
     2x Hynix HMT42GR7AFR4C-RD 16 GB 1867 MHz 2 rank
     8x Samsung M393B2G70DB0-CMA 16 GB 1867 MHz 2 rank
     6x Samsung M393B2G70QH0-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 = "12"

 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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