# SPEC® CINT2006 Result



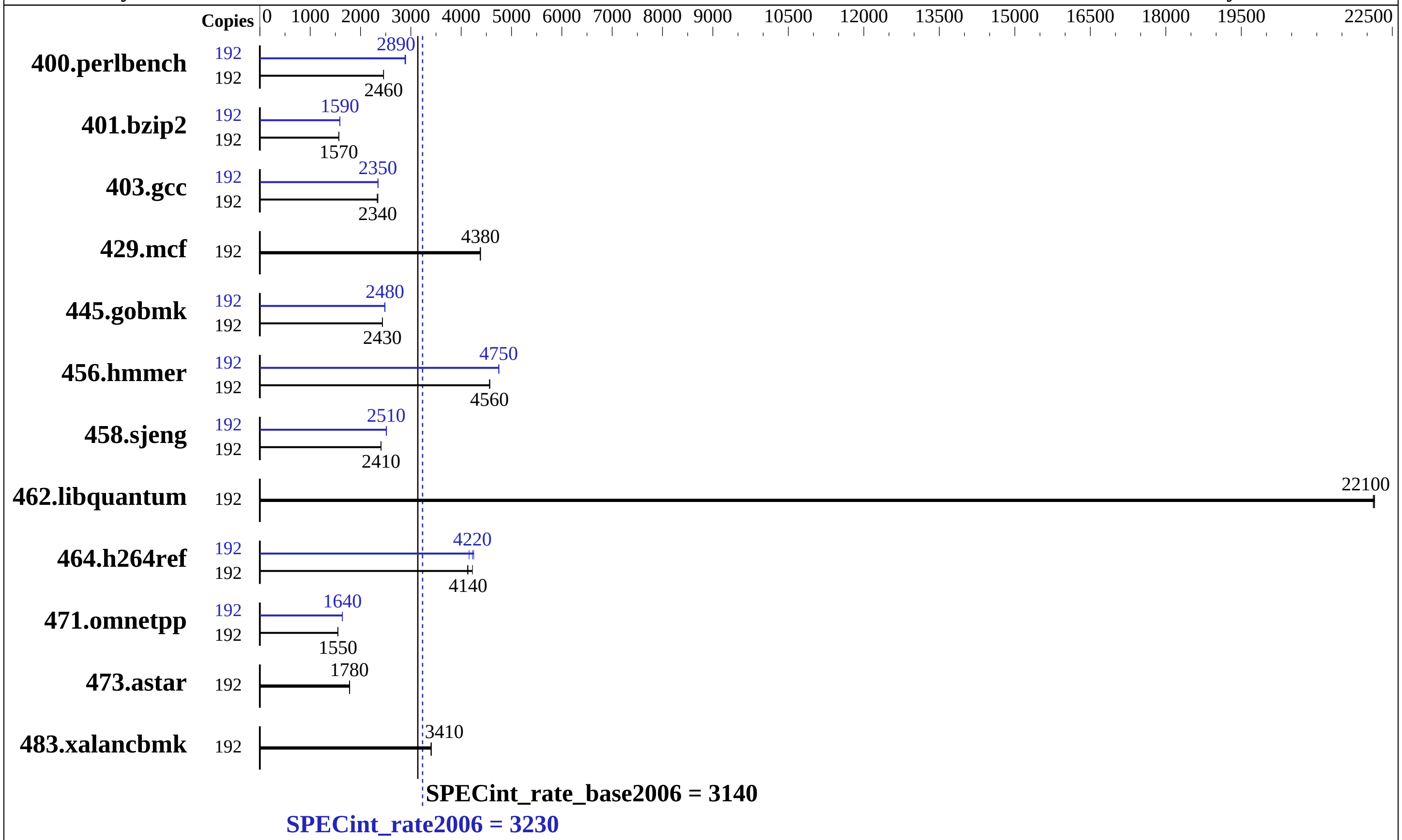
## Huawei

Huawei RH8100 V3 (Intel Xeon E7-8850 v2)

SPECint®_rate2006 = 3230

SPECint_rate_base2006 = 3140

| | | | |
|---|---|---|---|
| **CPU2006 license:** | 3175 | **Test date:** | Oct-2014 |
| **Test sponsor:** | Huawei | **Hardware Availability:** | Feb-2014 |
| **Tested by:** | Huawei | **Software Availability:** | Nov-2013 |




| Hardware | |
|---|---|
| CPU Name: | Intel Xeon E7-8850 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz |
| CPU MHz: | 2300 |
| FPU: | Integrated |
| CPU(s) enabled: | 96 cores, 8 chips, 12 cores/chip, 2 threads/core |
| CPU(s) orderable: | 4,8 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 24 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 1 TB (128 x 8 GB 2Rx8 PC3-12800R-11, ECC, running at 1333 MHz and CL9) |
| Disk Subsystem: | 2 x 600 GB SAS, 10K 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 14.0.0.080 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 |

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## Results Table

| | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Benchmark** | **Copies** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Copies** | **Seconds** | **Ratio** | **Seconds** | **Ratio** | **Seconds** | **Ratio** |
| 400.perlbench | 192 | **763** | **2460** | 763 | 2460 | 763 | 2460 | 192 | **649** | **2890** | 651 | 2880 | 647 | 2900 |
| 401.bzip2 | 192 | **1181** | **1570** | 1180 | 1570 | 1181 | 1570 | 192 | 1164 | 1590 | 1167 | 1590 | **1165** | **1590** |
| 403.gcc | 192 | **660** | **2340** | 663 | 2330 | 659 | 2350 | 192 | 660 | 2340 | 658 | 2350 | **659** | **2350** |
| 429.mcf | 192 | **399** | **4380** | 400 | 4380 | 399 | 4390 | 192 | **399** | **4380** | 400 | 4380 | 399 | 4390 |
| 445.gobmk | 192 | 828 | 2430 | **827** | **2430** | 827 | 2430 | 192 | **811** | **2480** | 812 | 2480 | 810 | 2490 |
| 456.hmmer | 192 | 393 | 4560 | 392 | 4570 | **393** | **4560** | 192 | **377** | **4750** | 377 | 4750 | 377 | 4750 |
| 458.sjeng | 192 | 965 | 2410 | 964 | 2410 | **964** | **2410** | 192 | 926 | 2510 | 923 | 2520 | **925** | **2510** |
| 462.libquantum | 192 | 180 | 22100 | **180** | **22100** | 180 | 22100 | 192 | 180 | 22100 | **180** | **22100** | 180 | 22100 |
| 464.h264ref | 192 | **1027** | **4140** | 1006 | 4220 | 1030 | 4130 | 192 | 1022 | 4160 | 1000 | 4250 | **1006** | **4220** |
| 471.omnetpp | 192 | 774 | 1550 | **774** | **1550** | 774 | 1550 | 192 | 731 | 1640 | **731** | **1640** | 732 | 1640 |
| 473.astar | 192 | **757** | **1780** | 755 | 1790 | 757 | 1780 | 192 | **757** | **1780** | 755 | 1790 | 757 | 1780 |
| 483.xalancbmk | 192 | 390 | 3400 | 389 | 3410 | **389** | **3410** | 192 | 390 | 3400 | 389 | 3410 | **389** | **3410** |

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 Performance
Set Lock_step to disabled
Baseboard Management Controller used to adjust the fan speed to 100%
C-State disabled,C6 Enabled
Adjacent Sector Prefetch Enabled
Sysinfo program /spec/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on RH8100V3 Thu Oct 30 04:49:17 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 E7-8850 v2 @ 2.30GHz
      8 "physical id"s (chips)
```

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## Platform Notes (Continued)

```
        192 "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 : 12
        siblings  : 24
        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
        physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 13
     cache size : 24576 KB

  From /proc/meminfo
     MemTotal:       1058584880 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 RH8100V3 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 Oct 29 12:19

  SPEC is set to: /spec
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda3      ext4  533G   28G  479G   6% /

  Additional information from dmidecode:
    BIOS American Megatrends Inc. BLHSV027 10/24/2014
    Memory:
     128x   8 GB
     128x Hynix HMT41GR7AFR8C-PB 8 GB 1333 MHz 2 rank
     64x NO DIMM NO DIMM

  (End of data from sysinfo program)
  Regarding the sysinfo display about the memory installed, the correct amount of
  memory is 1 TB and the dmidecode description should have one line reading as:
    128x Hynix HMT41GR7AFR8C-PB 8 GB 1333 MHz 2 rank
  BIOS can support the memory running at 1333MHz on the E7-8850 v2,E7-4850 v2,
  E7-4830 v2, E7-4820 v2, E7-4809 v2 or E7-2850 v2 processors, the memory
```

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## Platform Notes (Continued)

```
frequency can be set as 1333MHz by the function of POR+1 in BIOS version 025
with the latest Intel MRC(Memory Reference Code).
```

## General Notes

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

 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
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

C benchmarks:
`icc  -m32`

C++ benchmarks:
`icpc -m32`

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

C++ benchmarks:
`-xSSE4.2 -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`

## Peak Compiler Invocation

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

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
`icpc -m32`

## 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: `-xSSE4.2`(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: `-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 -auto-ilp32 -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div`

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## Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

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

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

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) -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-ic14.0-official-linux64-revC.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-revC.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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