# SPEC® CINT2006 Result



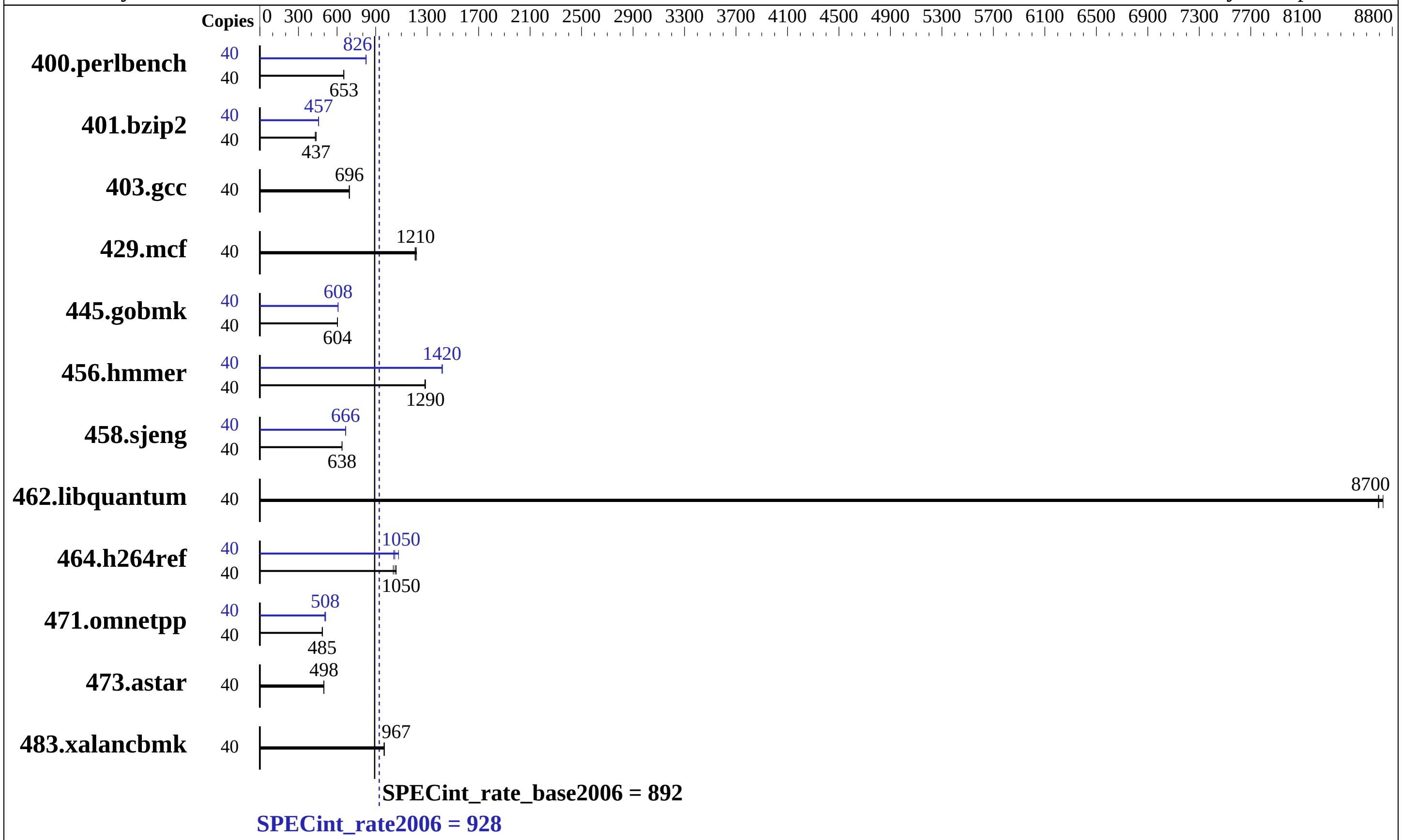
## Huawei

**SPECint®_rate2006 = 928**

Huawei XH628 V3 (Intel Xeon E5-2660 v3)

**SPECint_rate_base2006 = 892**

| | | | |
|---|---|---|---|
| **CPU2006 license:** | 3175 | **Test date:** | Feb-2015 |
| **Test sponsor:** | Huawei | **Hardware Availability:** | Sep-2014 |
| **Tested by:** | Huawei | **Software Availability:** | Sep-2014 |




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2660 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.30 GHz |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 20 cores, 2 chips, 10 cores/chip, 2 threads/core |
| 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 PC4-2133P-R) |
| Disk Subsystem: | 1 x 300 GB SAS, 10000 RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 7.0 (Maipo) 3.10.0-123.el7.x86_64 |
| Compiler: | C/C++: Version 15.0.0.090 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 | 40 | 600 | 651 | 598 | 654 | **598** | **653** | 40 | **473** | **826** | 473 | 827 | 474 | 824 |
| 401.bzip2 | 40 | 883 | 437 | **883** | **437** | 898 | 430 | 40 | **844** | **457** | 844 | 457 | 847 | 456 |
| 403.gcc | 40 | **463** | **696** | 464 | 694 | 462 | 697 | 40 | **463** | **696** | 464 | 694 | 462 | 697 |
| 429.mcf | 40 | 302 | 1210 | 300 | 1220 | **302** | **1210** | 40 | 302 | 1210 | 300 | 1220 | **302** | **1210** |
| 445.gobmk | 40 | **695** | **604** | 695 | 603 | 695 | 604 | 40 | 690 | 608 | **690** | **608** | 690 | 608 |
| 456.hmmer | 40 | **290** | **1290** | 291 | 1280 | 290 | 1290 | 40 | 263 | 1420 | **264** | **1420** | 264 | 1420 |
| 458.sjeng | 40 | **758** | **638** | 758 | 638 | 757 | 639 | 40 | 726 | 667 | **727** | **666** | 727 | 666 |
| 462.libquantum | 40 | 95.4 | 8690 | 95.0 | 8730 | **95.3** | **8700** | 40 | 95.4 | 8690 | 95.0 | 8730 | **95.3** | **8700** |
| 464.h264ref | 40 | **842** | **1050** | 854 | 1040 | 835 | 1060 | 40 | 851 | 1040 | 821 | 1080 | **844** | **1050** |
| 471.omnetpp | 40 | 513 | 487 | 516 | 484 | **516** | **485** | 40 | 495 | 505 | **492** | **508** | 489 | 511 |
| 473.astar | 40 | **564** | **498** | 565 | 497 | 564 | 498 | 40 | **564** | **498** | 565 | 497 | 564 | 498 |
| 483.xalancbmk | 40 | 285 | 968 | 286 | 964 | **285** | **967** | 40 | 285 | 968 | 286 | 964 | **285** | **967** |

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 Snoop Mode to COD
Sysinfo program /spec15/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon Feb  9 18:22:26 2015

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 E5-2660 v3 @ 2.60GHz
      2 "physical id"s (chips)
      40 "processors"
   cores, siblings (Caution: counting these is hw and system dependent.  The
   following excerpts from /proc/cpuinfo might not be reliable.  Use with
```

Continued on next page

## Platform Notes (Continued)

```
   caution.)
      cpu cores : 5
      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 : 12800 KB

From /proc/meminfo
   MemTotal:       263576084 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.0 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="7.0"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
      ANSI_COLOR="0;31"
      CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
   redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57
   EDT 2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 9 17:40

SPEC is set to: /spec15
   Filesystem            Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-root ext4  241G   49G  180G  22% /
Additional information from dmidecode:

   Warning: Use caution when you interpret this section. The 'dmidecode' program
   reads system data which is "intended to allow hardware to be accurately
   determined", but the intent may not be met, as there are frequent changes to
   hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS Insyde Corp. 1.20 10/25/2014
  Memory:
   8x Samsung M393A2G40DB0-CPB 16 GB 1 rank 2133 MHz
   8x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
```

# SPEC CINT2006 Result





## General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec15/libs/32:/spec15/libs/64:/spec15/sh"

 Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
 memory using RedHat EL 7.0
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/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>
 The Huawei XH622 V3 and Huawei XH628 V3
 are electronically equivalent.
 The results have been measured on a Huawei XH628 V3 model.
```

## Base Compiler Invocation

C benchmarks:
`icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks:
`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap`

## Base Other Flags

C benchmarks:

Continued on next page

## Base Other Flags (Continued)

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
`icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

## 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: `-xCORE-AVX2`(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: `-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 -auto-ilp32 -ansi-alias`

403.gcc: `basepeak = yes`

429.mcf: `basepeak = yes`

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## Peak Optimization Flags (Continued)

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-HASWELL-V1.4.xml

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

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