# SPEC® CINT2006 Result
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## Huawei

Huawei RH1288 V3 (Intel Xeon E5-2695 v3)

SPECint®_rate2006 = 1180

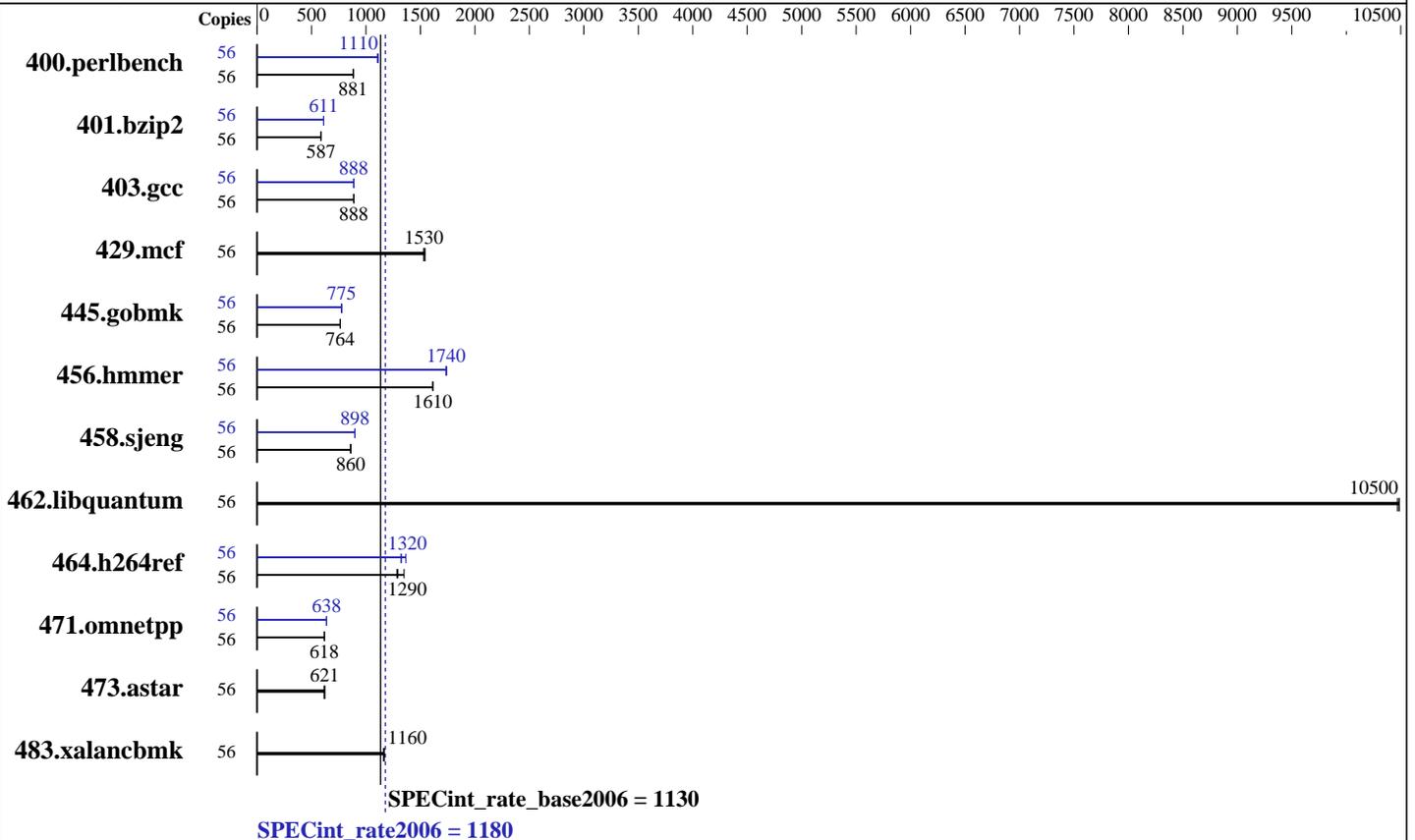SPECint_rate_base2006 = 1130

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

**Test date:** Dec-2014
**Hardware Availability:** Sep-2014
**Software Availability:** Jun-2014



SPECint_rate_base2006 = 1130

SPECint_rate2006 = 1180

| | |
|---|---|
| **400.perlbench** | 56 / 1110 ; 56 / 881 |
| **401.bzip2** | 56 / 611 ; 56 / 587 |
| **403.gcc** | 56 / 888 ; 56 / 888 |
| **429.mcf** | 56 / 1530 |
| **445.gobmk** | 56 / 775 ; 56 / 764 |
| **456.hmmer** | 56 / 1740 ; 56 / 1610 |
| **458.sjeng** | 56 / 898 ; 56 / 860 |
| **462.libquantum** | 56 / 10500 |
| **464.h264ref** | 56 / 1320 ; 56 / 1290 |
| **471.omnetpp** | 56 / 638 ; 56 / 618 |
| **473.astar** | 56 / 621 |
| **483.xalancbmk** | 56 / 1160 |

## Hardware

**CPU Name:** Intel Xeon E5-2695 v3
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.30 GHz
**CPU MHz:** 2300
**FPU:** Integrated
**CPU(s) enabled:** 28 cores, 2 chips, 14 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:** 35 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 500 GB SATA, 7200 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

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 56 | 618 | 886 | 621 | 881 | **621** | **881** | 56 | **493** | **1110** | 492 | 1110 | 496 | 1100 |
| 401.bzip2 | 56 | **921** | **587** | 920 | 587 | 926 | 584 | 56 | **885** | **611** | 885 | 610 | 883 | 612 |
| 403.gcc | 56 | 508 | 887 | 507 | 889 | **508** | **888** | 56 | 509 | 886 | **508** | **888** | 507 | 889 |
| 429.mcf | 56 | **333** | **1530** | 334 | 1530 | 331 | 1540 | 56 | **333** | **1530** | 334 | 1530 | 331 | 1540 |
| 445.gobmk | 56 | **769** | **764** | 769 | 764 | 771 | 762 | 56 | 759 | 774 | **758** | **775** | 755 | 778 |
| 456.hmmer | 56 | **324** | **1610** | 324 | 1610 | 323 | 1620 | 56 | 301 | 1730 | **301** | **1740** | 300 | 1740 |
| 458.sjeng | 56 | 788 | 860 | 788 | 859 | **788** | **860** | 56 | **755** | **898** | 755 | 897 | 754 | 898 |
| 462.libquantum | 56 | 111 | 10500 | 111 | 10500 | **111** | **10500** | 56 | 111 | 10500 | 111 | 10500 | **111** | **10500** |
| 464.h264ref | 56 | 918 | 1350 | **959** | **1290** | 966 | 1280 | 56 | 907 | 1370 | **936** | **1320** | 937 | 1320 |
| 471.omnetpp | 56 | 568 | 617 | **566** | **618** | 564 | 621 | 56 | **548** | **638** | 551 | 635 | 547 | 639 |
| 473.astar | 56 | 639 | 615 | **633** | **621** | 631 | 623 | 56 | 639 | 615 | **633** | **621** | 631 | 623 |
| 483.xalancbmk | 56 | 333 | 1160 | **332** | **1160** | 330 | 1170 | 56 | 333 | 1160 | **332** | **1160** | 330 | 1170 |

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 Custom
      Set Snoop Mode to COD
      Set Patrol Scrub to Disable
      Baseboard Management Controller used to adjust the fan speed to 100%
      Sysinfo program /spec15/config/sysinfo.rev6914
      $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
      running on localhost.localdomain Thu Dec 18 22:56:37 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 E5-2695 v3 @ 2.30GHz
            2 "physical id"s (chips)
            56 "processors"

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## Platform Notes (Continued)

```
   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 : 7
      siblings  : 14
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
   cache size : 17920 KB

From /proc/meminfo
   MemTotal:       263716344 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 Dec 18 18:18

SPEC is set to: /spec15
   Filesystem           Type  Size  Used Avail Use% Mounted on
   /dev/mapper/rhel-root ext4  241G   83G  146G  37% /
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. 1.18 09/17/2014
  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)
```

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## 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>
```

## 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:
```
        403.gcc: -Dalloca=_alloca
```

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## 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: -xCORE-AVX2 -ipo -O3 -no-prec-div

      429.mcf: basepeak = yes

    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

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# Peak Optimization Flags (Continued)

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-V1.1.20141216.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-V1.1.20141216.xml

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

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