



# SPEC® CINT2006 Result

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## Huawei

SPECint®\_rate2006 = 426

Huawei RH1288A V2 (Intel Xeon E5-2620 v2)

SPECint\_rate\_base2006 = 410

CPU2006 license: 3175

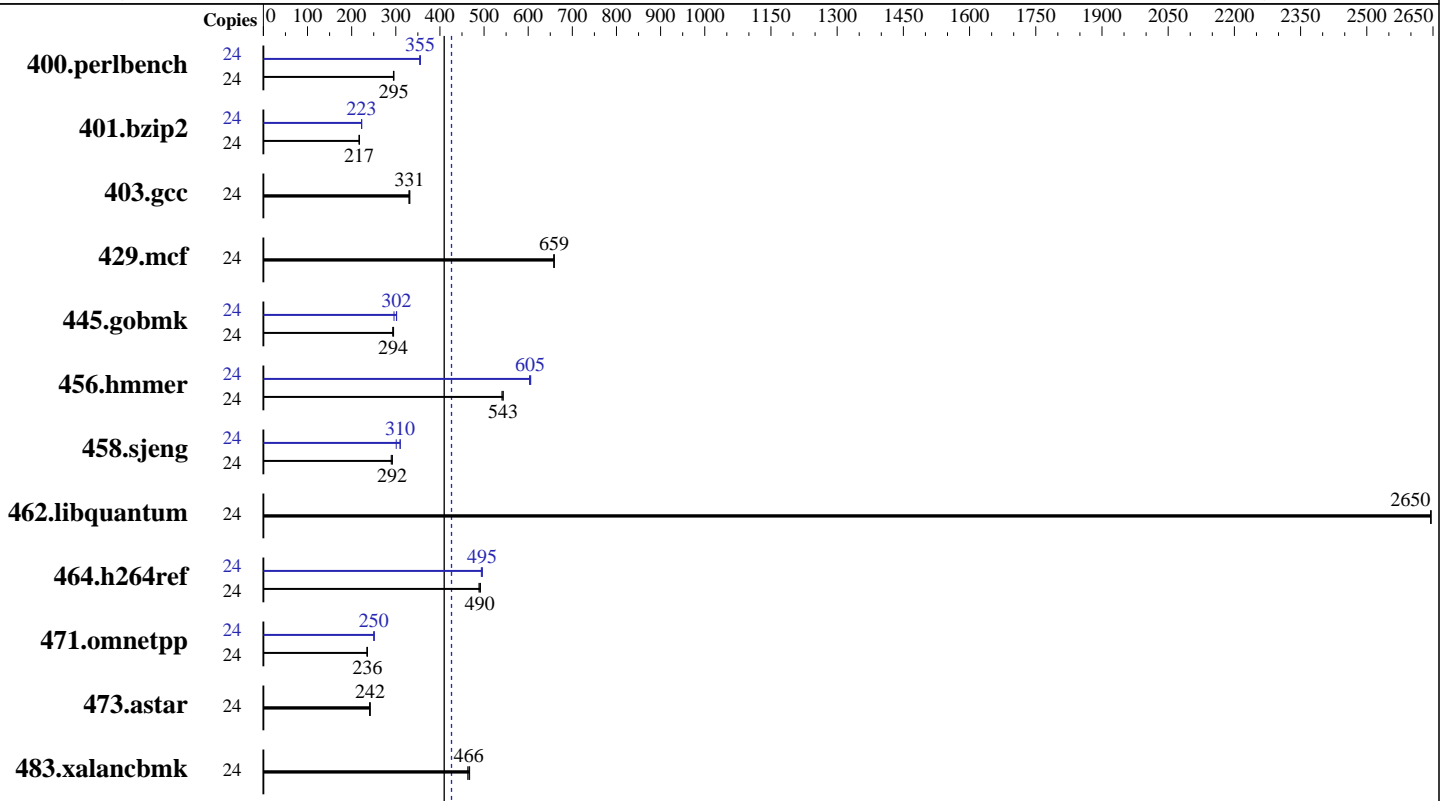
Test sponsor: Huawei

Tested by: Huawei

Test date: Sep-2014

Hardware Availability: Sep-2013

Software Availability: Nov-2013



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### Hardware

CPU Name: Intel Xeon E5-2620 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-11, ECC, running at 1600 MHz)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 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

| Benchmark      | Base   |             |             |            |            |             |            | Peak   |            |             |            |            |             |            |
|----------------|--------|-------------|-------------|------------|------------|-------------|------------|--------|------------|-------------|------------|------------|-------------|------------|
|                | Copies | Seconds     | Ratio       | Seconds    | Ratio      | Seconds     | Ratio      | Copies | Seconds    | Ratio       | Seconds    | Ratio      | Seconds     | Ratio      |
| 400.perlbench  | 24     | <b>794</b>  | <b>295</b>  | 793        | 296        | 796         | 295        | 24     | 662        | 354         | 659        | 356        | <b>660</b>  | <b>355</b> |
| 401.bzip2      | 24     | <b>1067</b> | <b>217</b>  | 1063       | 218        | 1068        | 217        | 24     | 1040       | 223         | 1041       | 222        | <b>1041</b> | <b>223</b> |
| 403.gcc        | 24     | 582         | 332         | <b>584</b> | <b>331</b> | 586         | 330        | 24     | 582        | 332         | <b>584</b> | <b>331</b> | 586         | 330        |
| 429.mcf        | 24     | 333         | 658         | 332        | 659        | <b>332</b>  | <b>659</b> | 24     | 333        | 658         | 332        | 659        | <b>332</b>  | <b>659</b> |
| 445.gobmk      | 24     | 859         | 293         | <b>856</b> | <b>294</b> | 853         | 295        | 24     | <b>835</b> | <b>302</b>  | 851        | 296        | 834         | 302        |
| 456.hammer     | 24     | 412         | 543         | 414        | 541        | <b>412</b>  | <b>543</b> | 24     | 370        | 606         | 371        | 603        | <b>370</b>  | <b>605</b> |
| 458.sjeng      | 24     | 994         | 292         | 1003       | 290        | <b>996</b>  | <b>292</b> | 24     | 965        | 301         | 937        | 310        | <b>937</b>  | <b>310</b> |
| 462.libquantum | 24     | <b>188</b>  | <b>2650</b> | 188        | 2640       | 188         | 2650       | 24     | <b>188</b> | <b>2650</b> | 188        | 2640       | 188         | 2650       |
| 464.h264ref    | 24     | 1080        | 492         | 1087       | 488        | <b>1083</b> | <b>490</b> | 24     | 1071       | 496         | 1075       | 494        | <b>1072</b> | <b>495</b> |
| 471.omnetpp    | 24     | <b>637</b>  | <b>236</b>  | 640        | 235        | 636         | 236        | 24     | 599        | 250         | 597        | 251        | <b>599</b>  | <b>250</b> |
| 473.astar      | 24     | 700         | 241         | <b>697</b> | <b>242</b> | 696         | 242        | 24     | 700        | 241         | <b>697</b> | <b>242</b> | 696         | 242        |
| 483.xalancbmk  | 24     | 358         | 463         | 354        | 467        | <b>356</b>  | <b>466</b> | 24     | 358        | 463         | 354        | 467        | <b>356</b>  | <b>466</b> |

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

Baseboard Management Controller used to adjust the fan speed to 100%

Sysinfo program /spec/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191

running on localhost Tue Sep 9 06:52:58 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 E5-2620 v2 @ 2.10GHz

2 "physical id"s (chips)

24 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with

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info@spec.org

<http://www.spec.org/>

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## Platform Notes (Continued)

```

caution.)
  cpu cores : 6
  siblings  : 12
  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:      132103760 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 9 06:47

```

SPEC is set to: /spec
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sdal        ext4     439G      74G   343G  18% /

```

```

Additional information from dmidecode:
BIOS Insyde Corp. RMIBV388 08/09/2014
Memory:
8x Samsung M393B2G70QH0-CMA 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:  
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>
The Huawei RH2288A V2 and Huawei RH1288A V2

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## General Notes (Continued)

are electronically equivalent.  
The results have been measured on a Huawei RH2288A V2 model

## 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

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## Peak Compiler Invocation (Continued)

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: basepeak = yes

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

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## Peak Optimization Flags (Continued)

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-linux64.20140128.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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.

Report generated on Tue Dec 30 16:12:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 30 December 2014.