# SPEC® CINT2006 Result

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## Huawei

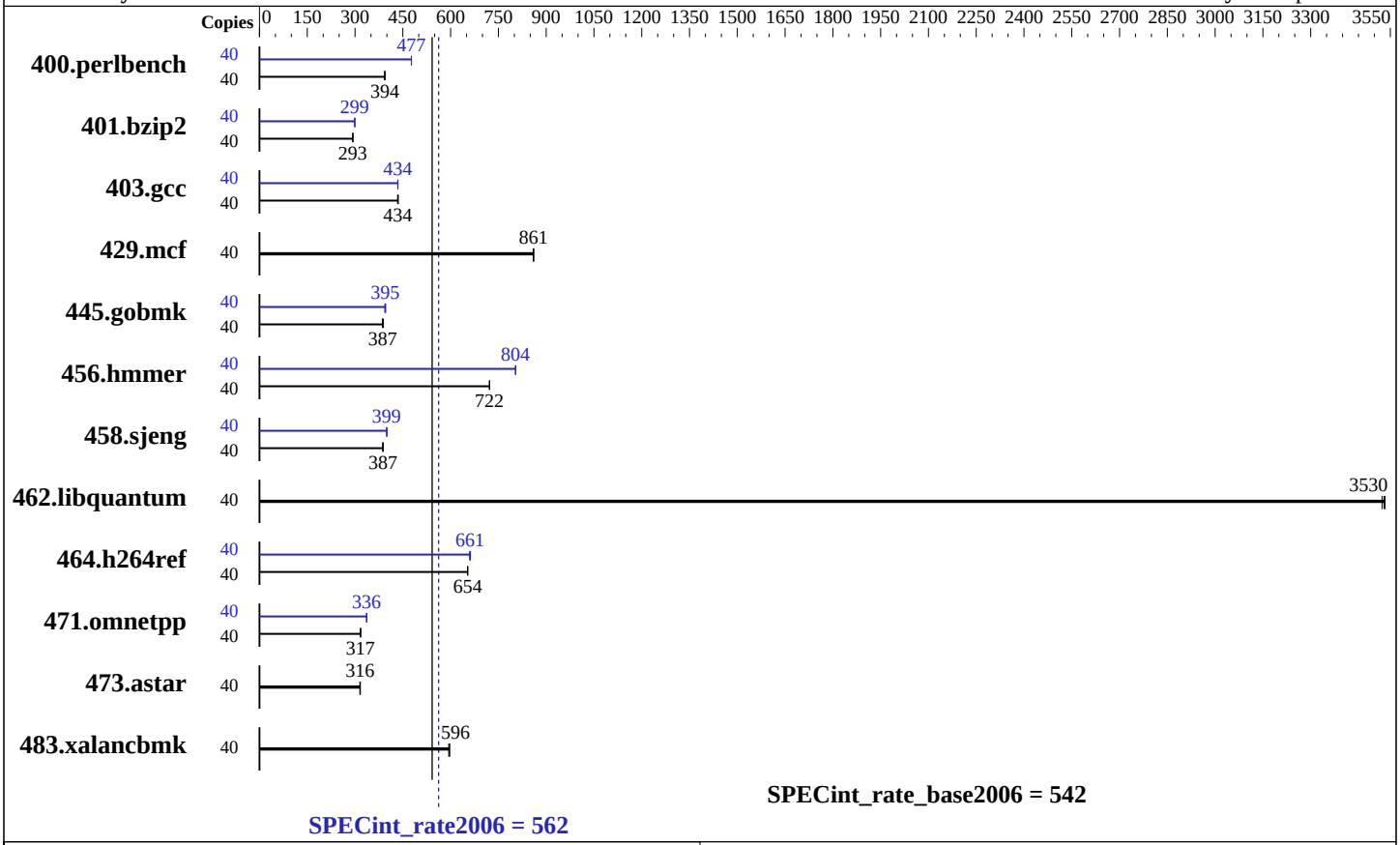
Huawei RH2288H V2 (Intel Xeon E5-2650L v2)

SPECint®_rate2006 = 562

SPECint_rate_base2006 = 542

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

**Test date:** Aug-2014
**Hardware Availability:** Sep-2013
**Software Availability:** Sep-2013




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2650L v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.10 GHz |
| CPU MHz: | 1700 |
| 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: | 128 GB (16 x 8 GB 2Rx8 PC3-12800R-11, ECC) |
| Disk Subsystem: | 1 x 300 GB SAS, 10K RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago)<br>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 | 40 | 994 | 393 | 992 | 394 | **993** | **394** | 40 | 819 | 477 | **819** | **477** | 820 | 477 |
| 401.bzip2 | 40 | 1318 | 293 | **1318** | **293** | 1316 | 293 | 40 | 1291 | 299 | 1290 | 299 | **1290** | **299** |
| 403.gcc | 40 | **741** | **434** | 739 | 436 | 743 | 434 | 40 | 742 | 434 | 741 | 435 | **741** | **434** |
| 429.mcf | 40 | 424 | 860 | **424** | **861** | 424 | 861 | 40 | 424 | 860 | **424** | **861** | 424 | 861 |
| 445.gobmk | 40 | 1079 | 389 | 1087 | 386 | **1084** | **387** | 40 | 1059 | 396 | **1062** | **395** | 1066 | 394 |
| 456.hmmer | 40 | 517 | 722 | 516 | 723 | **517** | **722** | 40 | 464 | 804 | 464 | 804 | **464** | **804** |
| 458.sjeng | 40 | **1249** | **387** | 1245 | 389 | 1252 | 387 | 40 | 1210 | 400 | **1212** | **399** | 1212 | 399 |
| 462.libquantum | 40 | **235** | **3530** | 235 | 3530 | 235 | 3520 | 40 | **235** | **3530** | 235 | 3530 | 235 | 3520 |
| 464.h264ref | 40 | 1354 | 654 | **1354** | **654** | 1355 | 653 | 40 | **1338** | **661** | 1336 | 662 | 1342 | 660 |
| 471.omnetpp | 40 | 787 | 318 | 789 | 317 | **788** | **317** | 40 | **743** | **336** | 742 | 337 | 744 | 336 |
| 473.astar | 40 | **890** | **316** | 890 | 316 | 887 | 317 | 40 | **890** | **316** | 890 | 316 | 887 | 317 |
| 483.xalancbmk | 40 | **463** | **596** | 462 | 597 | 465 | 594 | 40 | **463** | **596** | 462 | 597 | 465 | 594 |

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 wbspeccpu Fri Aug 29 05:09:26 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 E5-2650L v2 @ 1.70GHz
      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 : 10
         siblings  : 20
         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 : 25600 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 wbspeccpu 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 22 01:34

   SPEC is set to: /spec
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sda1      ext4  270G  149G  108G  59% /

   Additional information from dmidecode:
     BIOS Insyde Corp. RMIBV629 05/12/2014
     Memory:
      16x Hynix HMT41GR7MFR8C-PB 8 GB 1600 MHz 2 rank
      8x NO DIMM NO DIMM

   (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>
```

## 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

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

Continued on next page

## Peak Optimization Flags (Continued)

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`


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