



SPEC® CINT2006 Result

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Huawei

SPECint®2006 = 65.9

Huawei RH8100 V3 (Intel Xeon E7-8891 v2)

SPECint_base2006 = 60.6

CPU2006 license: 3175

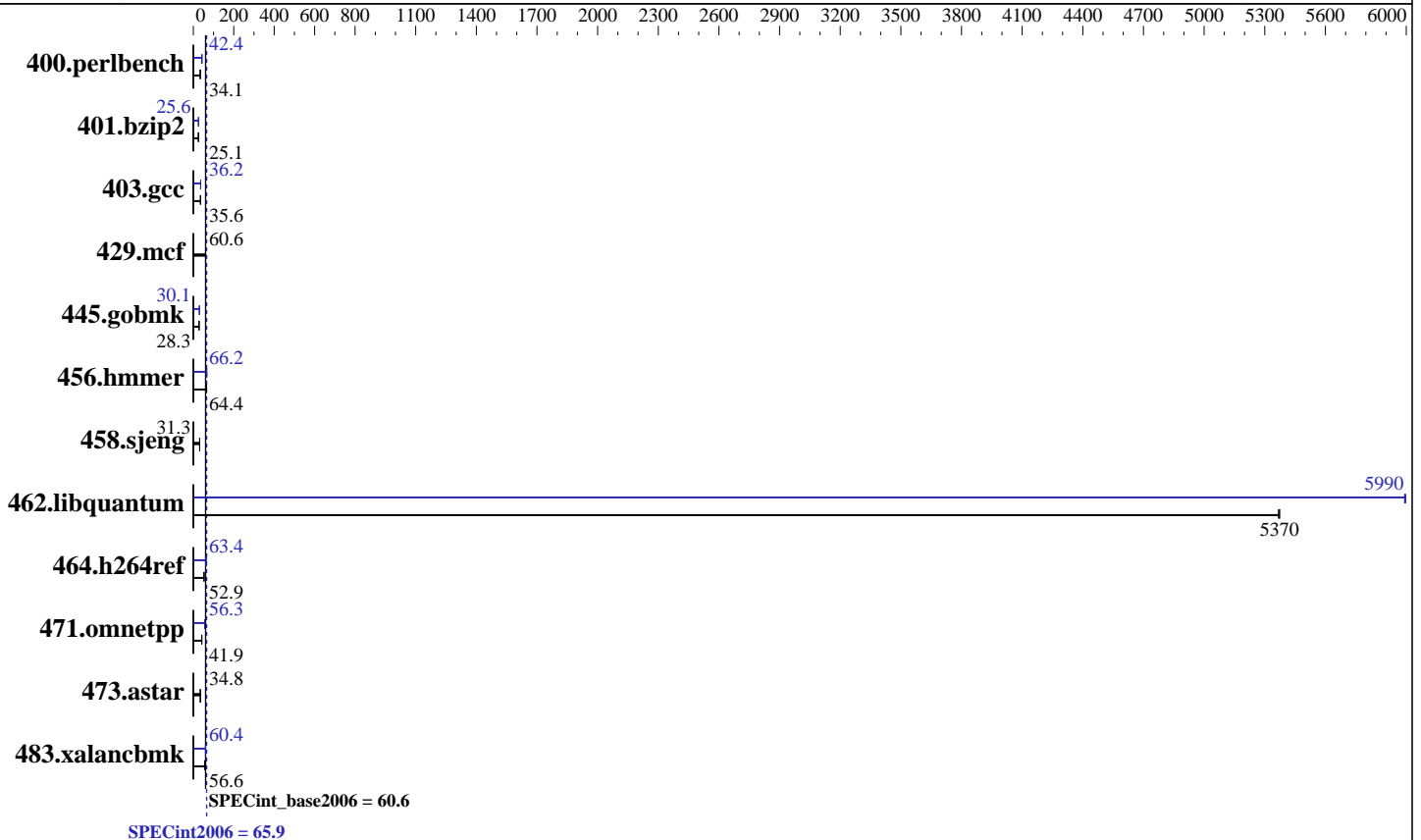
Test date: Oct-2014

Test sponsor: Huawei

Hardware Availability: Feb-2014

Tested by: Huawei

Software Availability: Nov-2013



Hardware

CPU Name: Intel Xeon E7-8891 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 80 cores, 8 chips, 10 cores/chip
 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: 37.5 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: 1 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 12.1.0.225 of Intel C++ Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V9.01



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	286	34.1	286	34.1	286	34.1	231	42.4	230	42.4	230	42.5
401.bzip2	384	25.1	385	25.1	385	25.1	377	25.6	376	25.6	377	25.6
403.gcc	226	35.6	227	35.5	226	35.6	223	36.1	223	36.2	223	36.2
429.mcf	150	60.8	151	60.6	151	60.5	150	60.8	151	60.6	151	60.5
445.gobmk	371	28.3	371	28.3	371	28.3	348	30.2	348	30.1	348	30.1
456.hmmr	145	64.5	145	64.4	145	64.4	141	66.2	141	66.0	141	66.2
458.sjeng	386	31.3	386	31.3	386	31.3	386	31.3	386	31.3	386	31.3
462.libquantum	3.86	5370	3.86	5370	3.86	5370	3.46	5990	3.46	5990	3.45	6000
464.h264ref	418	52.9	419	52.9	420	52.7	349	63.4	349	63.4	349	63.4
471.omnetpp	149	41.9	150	41.6	149	42.0	111	56.4	112	55.9	111	56.3
473.astar	202	34.7	202	34.8	201	34.9	202	34.7	202	34.8	201	34.9
483.xalancbmk	123	56.2	122	56.7	122	56.6	114	60.4	115	60.2	114	60.5

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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
Set Intel Hyper Threading to disabled
Sysinfo program /spec/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on RH8100V3 Wed Oct 22 06:30:32 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 E7-8891 v2 @ 3.20GHz
 8 "physical id"s (chips)
 80 "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 : 10
siblings : 10

```

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Platform Notes (Continued)

```
physical 0: cores 2 3 4 5 6 7 8 10 11 12
physical 1: cores 2 3 4 5 6 7 8 10 11 12
physical 2: cores 2 3 4 5 6 7 8 10 11 12
physical 3: cores 2 3 4 5 6 7 8 10 11 12
physical 4: cores 2 3 4 5 6 7 8 10 11 12
physical 5: cores 2 3 4 5 6 7 8 10 11 12
physical 6: cores 2 3 4 5 6 7 8 10 11 12
physical 7: cores 2 3 4 5 6 7 8 10 11 12
cache size : 38400 KB
```

```
From /proc/meminfo
MemTotal:      1058598780 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 22 06:28
```

```
SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       ext4  533G   28G  478G   6% /
```

Additional information from dmidecode:

```
Memory:
128x Hynix HMT41GR7AFR8C-PB 8 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)

memory is 1 TB and the dmidecode description should have one line reading as:

```
128x Hynix HMT41GR7AFR8C-PB 8 GB 1600 MHz 2 rank
```

Dmidecode mistakenly believes the memory was running at 1600 MHz, when it should only run at 1333 MHz

This benchmark result is intended to provide perspective on past performance using the historical software described on this result page. The system as described on this result page was formerly generally available (Oct-2014). But at the time of this publication (November 2014), the compiler specified (Intel Compiler 12) was not listed as supported per <https://software.intel.com/en-us/articles/intel-compilers-supported-compiler-versions> This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.



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General Notes

Environment variables set by runspec before the start of the run:

```
KMP_AFFINITY = "granularity=fine,compact,0,1"  
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64"  
OMP_NUM_THREADS = "80"
```

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Base Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks:

```
icpc -m64
```

Base Portability Flags

```
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64  
401.bzip2: -DSPEC_CPU_LP64  
403.gcc: -DSPEC_CPU_LP64  
429.mcf: -DSPEC_CPU_LP64  
445.gobmk: -DSPEC_CPU_LP64  
456.hmmer: -DSPEC_CPU_LP64  
458.sjeng: -DSPEC_CPU_LP64  
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX  
464.h264ref: -DSPEC_CPU_LP64  
471.omnetpp: -DSPEC_CPU_LP64  
473.astar: -DSPEC_CPU_LP64  
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:

```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/smartheap -lsmartheap64
```



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Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

464.h264ref: icc -m32

C++ benchmarks (except as noted below):

icpc -m32

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmr: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
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)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

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Peak Optimization Flags (Continued)

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

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

458.sjeng: basepeak = yes

462.libquantum: -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch
-auto-p32

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)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/smartheap -lsmartheap

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-ic12.1-official-linux64.20111122.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-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml>



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Tested with SPEC CPU2006 v1.2.
Report generated on Tue Nov 18 16:32:14 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 18 November 2014.