



SPEC® CINT2006 Result

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Huawei

SPECint®_rate2006 = 2060

Huawei RH5885H V3 (Intel Xeon E7-4850 v3)

SPECint_rate_base2006 = 1980

CPU2006 license: 3175

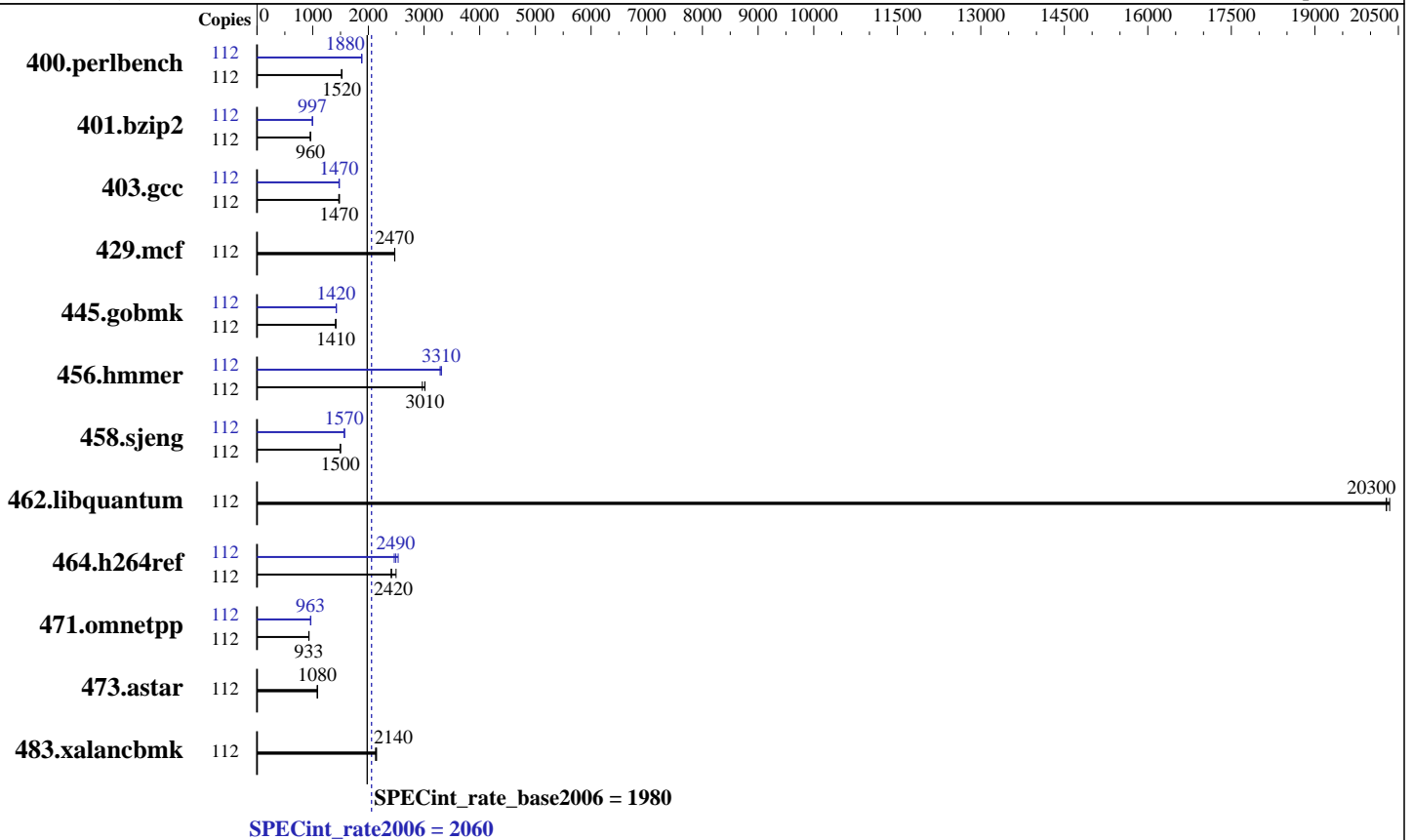
Test date: May-2015

Test sponsor: Huawei

Hardware Availability: May-2015

Tested by: Huawei

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E7-4850 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 56 cores, 4 chips, 14 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 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: 35 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
 Disk Subsystem: 2 x 300 GB SAS, 10K 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: xfs
 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	112	<u>720</u>	<u>1520</u>	718	1520	720	1520	112	581	1880	<u>582</u>	<u>1880</u>	582	1880
401.bzip2	112	1125	961	1127	959	<u>1126</u>	<u>960</u>	112	1087	994	<u>1084</u>	<u>997</u>	1084	997
403.gcc	112	<u>612</u>	<u>1470</u>	614	1470	608	1480	112	613	1470	<u>611</u>	<u>1470</u>	609	1480
429.mcf	112	<u>413</u>	<u>2470</u>	413	2470	413	2470	112	<u>413</u>	<u>2470</u>	413	2470	413	2470
445.gobmk	112	830	1420	832	1410	<u>830</u>	<u>1410</u>	112	<u>825</u>	<u>1420</u>	825	1420	825	1420
456.hammer	112	352	2970	347	3020	<u>347</u>	<u>3010</u>	112	<u>316</u>	<u>3310</u>	318	3290	316	3310
458.sjeng	112	906	1500	<u>904</u>	<u>1500</u>	904	1500	112	863	1570	864	1570	<u>863</u>	<u>1570</u>
462.libquantum	112	114	20300	114	20300	<u>114</u>	<u>20300</u>	112	114	20300	114	20300	<u>114</u>	<u>20300</u>
464.h264ref	112	993	2500	1029	2410	<u>1025</u>	<u>2420</u>	112	1006	2460	978	2540	<u>994</u>	<u>2490</u>
471.omnetpp	112	750	934	753	930	<u>750</u>	<u>933</u>	112	728	962	<u>727</u>	<u>963</u>	724	967
473.astar	112	726	1080	724	1090	<u>725</u>	<u>1080</u>	112	726	1080	724	1090	<u>725</u>	<u>1080</u>
483.xalancbmk	112	<u>361</u>	<u>2140</u>	363	2130	360	2150	112	<u>361</u>	<u>2140</u>	363	2130	360	2150

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"
Turbo mode set with:
cpupower -c all frequency-set -g performance

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%
Set DRAM Maintenance to Manual
Set DRAM Maintenance Mode to pTRR
Set Patrol Scrub to Enabled
Set Memory Power Saving to disabled
Sysinfo program /spec/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on RH5885HV3 Fri May 29 06:55:19 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>

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Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E7-4850 v3 @ 2.20GHz
 4 "physical id"s (chips)
 112 "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 : 14
  siblings  : 28
  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
  physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
  physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
cache size : 35840 KB

```

```

From /proc/meminfo
MemTotal:      1056465940 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 RH5885HV3 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 May 27 10:55

```

SPEC is set to: /spec
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   537G  143G  395G  27% /

```

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 American Megatrends Inc. BLISV705 03/30/2015
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Platform Notes (Continued)

Memory:

32x NO DIMM NO DIMM
64x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1333 MHz

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 1 TB and the dmidecode description should have two lines reading as:

32x NO DIMM NO DIMM
64x Samsung M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz, configured at 1333 MHz

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 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

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Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmarheap

Base Other Flags

C benchmarks:

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

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Peak Optimization Flags (Continued)

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

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-V1.0-HSW-RevG.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-V1.0-HSW-RevG.xml>



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For other inquiries, please contact webmaster@spec.org.

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