



SPEC® CINT2006 Result

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Huawei

SPECint®_rate2006 = 1910

Tecal RH5885 V2 (8-sockets, Intel Xeon E7-8860)

SPECint_rate_base2006 = 1840

CPU2006 license: 3175

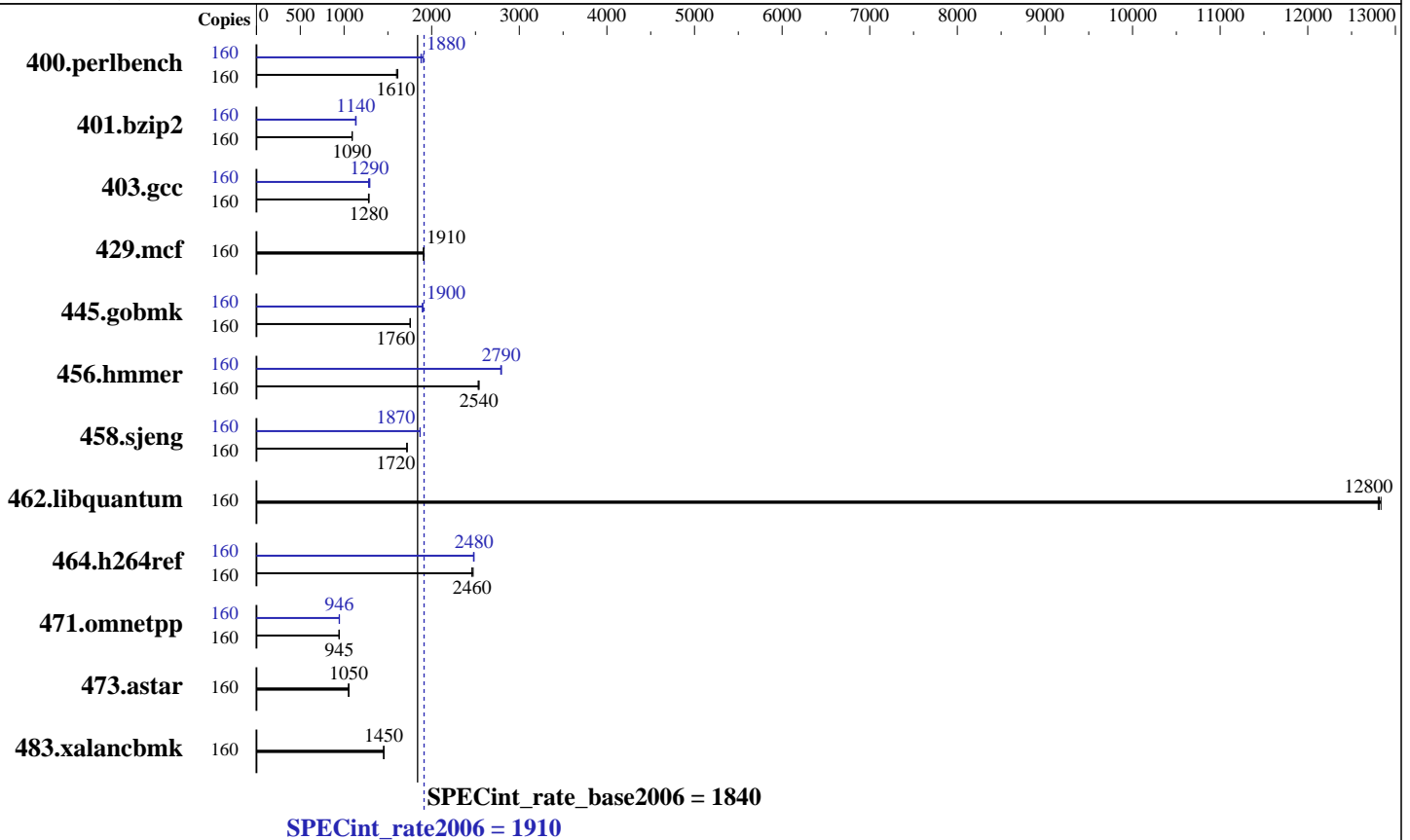
Test date: Jan-2013

Test sponsor: Huawei

Hardware Availability: Oct-2012

Tested by: Huawei

Software Availability: Oct-2012



Hardware

CPU Name: Intel Xeon E7-8860
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
 CPU MHz: 2267
 FPU: Integrated
 CPU(s) enabled: 80 cores, 8 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 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: 24 MB I+D on chip per chip
 Other Cache: None
 Memory: 2 TB (128 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1066 MHz)
 Disk Subsystem: 2 x 500 GB (SATA, 7200RPM, RAID1)
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 13.0.0.079 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 V9.01



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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	160	969	1610	978	1600	<u>973</u>	<u>1610</u>	160	820	1910	<u>830</u>	<u>1880</u>	833	1880
401.bzip2	160	1412	1090	<u>1414</u>	<u>1090</u>	1415	1090	160	<u>1359</u>	<u>1140</u>	1358	1140	1366	1130
403.gcc	160	<u>1005</u>	<u>1280</u>	1002	1290	1007	1280	160	1007	1280	<u>997</u>	<u>1290</u>	996	1290
429.mcf	160	765	1910	<u>765</u>	<u>1910</u>	764	1910	160	765	1910	<u>765</u>	<u>1910</u>	764	1910
445.gobmk	160	<u>956</u>	<u>1760</u>	957	1750	956	1760	160	<u>885</u>	<u>1900</u>	884	1900	886	1890
456.hammer	160	<u>588</u>	<u>2540</u>	588	2540	590	2530	160	534	2800	<u>534</u>	<u>2790</u>	535	2790
458.sjeng	160	1128	1720	1125	1720	<u>1126</u>	<u>1720</u>	160	1037	1870	<u>1037</u>	<u>1870</u>	1036	1870
462.libquantum	160	259	12800	<u>259</u>	<u>12800</u>	258	12800	160	259	12800	<u>259</u>	<u>12800</u>	258	12800
464.h264ref	160	1439	2460	<u>1439</u>	<u>2460</u>	1431	2470	160	<u>1426</u>	<u>2480</u>	1430	2480	1426	2480
471.omnetpp	160	1062	942	1058	945	<u>1059</u>	<u>945</u>	160	<u>1057</u>	<u>946</u>	1059	944	1055	948
473.astar	160	1068	1050	<u>1067</u>	<u>1050</u>	1067	1050	160	1068	1050	<u>1067</u>	<u>1050</u>	1067	1050
483.xalancbmk	160	<u>760</u>	<u>1450</u>	759	1450	761	1450	160	<u>760</u>	<u>1450</u>	759	1450	761	1450

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:

Power Technology set to Custom, Performance/Watt set to Traditional
Sysinfo program /home/cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ 5569a0425e2ad530534e4c79a46e4d28
running on 5885-8P-15 Mon Jan 21 21:02:33 2013

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- 8860 @ 2.27GHz
 8 "physical id"s (chips)
160 "processors"
```

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

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Platform Notes (Continued)

```

cpu cores : 10
siblings  : 20
physical 0: cores 0 1 2 3 4 5 6 7 8 9
physical 1: cores 0 1 2 3 4 5 6 7 8 9
physical 2: cores 0 1 2 3 4 5 6 7 8 9
physical 3: cores 0 1 2 3 4 5 6 7 8 9
physical 4: cores 0 1 2 3 4 5 6 7 8 9
physical 5: cores 0 1 2 3 4 5 6 7 8 9
physical 6: cores 0 1 2 3 4 5 6 7 8 9
physical 7: cores 0 1 2 3 4 5 6 7 8 9
cache size : 24576 KB

```

```

From /proc/meminfo
MemTotal:      2117589372 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux 5885-8P-15 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Jan 21 18:41

```

SPEC is set to: /home/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/mapper/vg_58858p15-lv_home
                ext4      434G      14G   398G   4% /home

```

```

Additional information from dmidecode:
BIOS American Megatrends Inc. RGPUC-BIOS-V052 01/09/2013
Memory:
128x      16 GB
64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank
1x Samsung .....D..... 16 GB 1067 MHz 4 rank
62x Samsung M393B2K70CM0-CH9 16 GB 1067 MHz 4 rank
1x Samsung M393B2K70CM0-CH9D. 16 GB 1067 MHz 4 rank

```

(End of data from sysinfo program)
 Descriptions about memory generated by sysinfo are not correct,
 only 128 DIMMs are installed not 256, see descriptions below.

```

Memory:
64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank
1x Samsung .....D..... 16 GB 1067 MHz 4 rank
62x Samsung M393B2K70CM0-CH9 16 GB 1067 MHz 4 rank

```

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Platform Notes (Continued)

1x Samsung M393B2K70CM0-CH9D. 16 GB 1067 MHz 4 rank

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Binaries compiled on a system with 4x Xeon E7-8870 CPU + 1024GB memory using RHEL6.2
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/home/cpu2006/smartheap -lsmartheap

Base Other Flags

C benchmarks:

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Base Other Flags (Continued)

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

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Peak Optimization Flags (Continued)

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmr: -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/home/cpu2006/smartheap -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-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-revG.xml>



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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 15:15:18 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 26 February 2013.