SPEC® CINT2006 Result
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Huawei

Tecal RH5885 V2 (8-sockets, Intel Xeon E7-8870)

$SPECint^{®}\_rate2006 =$ **2080**

$SPECint\_rate\_base2006 =$ **2000**

CPU2006 license: 3175	**Test date:** Jan-2013
Test sponsor: Huawei	**Hardware Availability:** Dec-2012
Tested by: Huawei	**Software Availability:** Oct-2012

Copies

400.perlbench: 160 / 1970; 160 / 1700
401.bzip2: 160 / 1260; 160 / 1210
403.gcc: 160 / 1410; 160 / 1410
429.mcf: 160 / 2150
445.gobmk: 160 / 2000; 160 / 1860
456.hmmer: 160 / 3180; 160 / 2860
458.sjeng: 160 / 1970; 160 / 1810
462.libquantum: 160 / 13400
464.h264ref: 160 / 2630; 160 / 2600
471.omnetpp: 160 / 1070; 160 / 1070
473.astar: 160 / 1130
483.xalancbmk: 160 / 1590

SPECint_rate_base2006 = 2000
SPECint_rate2006 = 2080
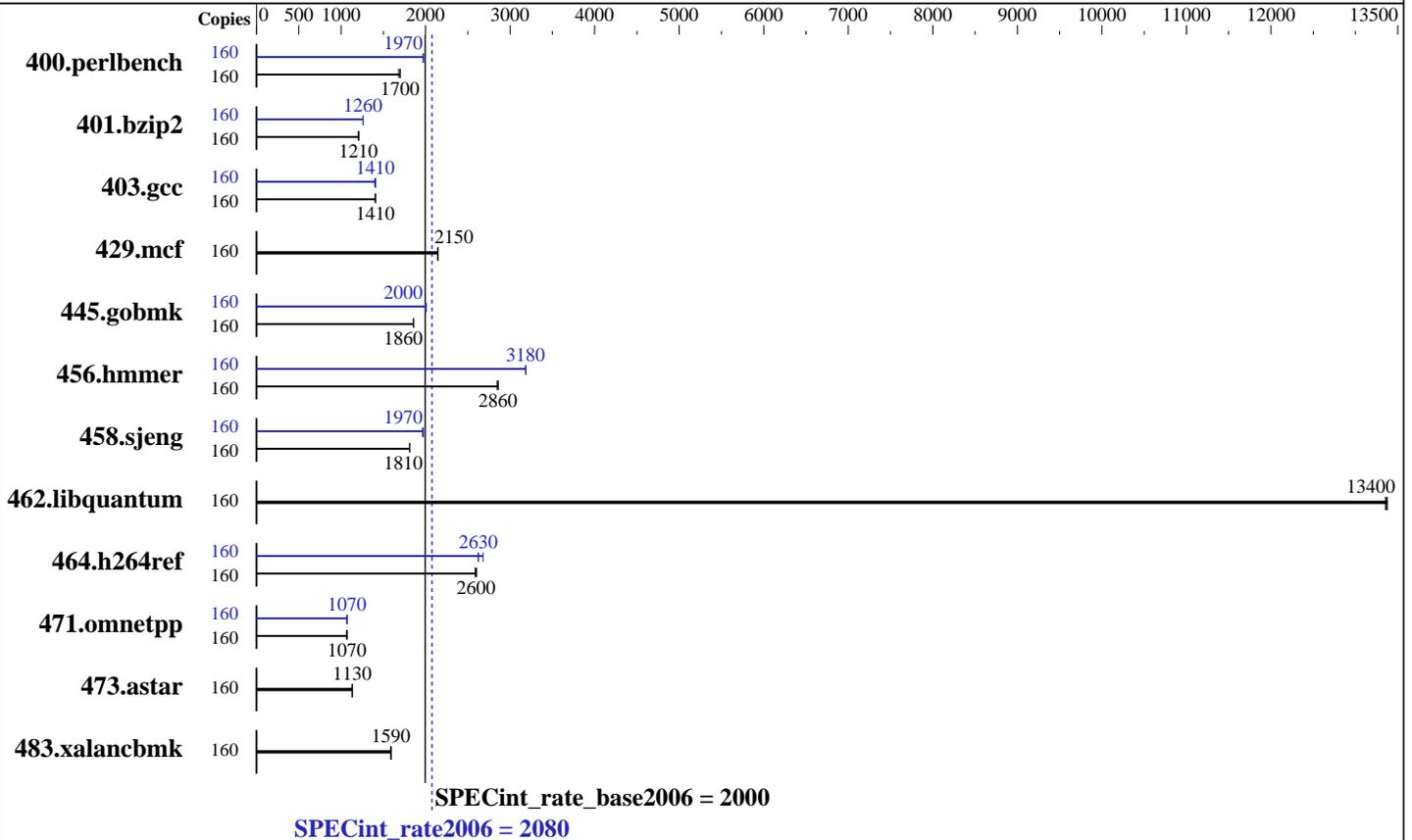
Hardware

CPU Name:	Intel Xeon E7-8870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
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:	30 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	919	1700	**921**	**1700**	930	1680	160	790	1980	793	1970	**793**	**1970**
401.bzip2	160	**1279**	**1210**	1278	1210	1279	1210	160	1226	1260	1225	1260	**1225**	**1260**
403.gcc	160	913	1410	917	1400	**916**	**1410**	160	**916**	**1410**	914	1410	920	1400
429.mcf	160	679	2150	**679**	**2150**	681	2140	160	679	2150	**679**	**2150**	681	2140
445.gobmk	160	903	1860	**903**	**1860**	904	1860	160	839	2000	837	2000	**837**	**2000**
456.hmmer	160	522	2860	525	2850	**522**	**2860**	160	468	3190	**469**	**3180**	469	3180
458.sjeng	160	1069	1810	**1068**	**1810**	1068	1810	160	983	1970	**983**	**1970**	983	1970
462.libquantum	160	248	13400	**248**	**13400**	248	13400	160	248	13400	**248**	**13400**	248	13400
464.h264ref	160	1368	2590	1360	2600	**1363**	**2600**	160	1350	2620	1321	2680	**1348**	**2630**
471.omnetpp	160	935	1070	**935**	**1070**	937	1070	160	935	1070	**934**	**1070**	933	1070
473.astar	160	**991**	**1130**	995	1130	990	1130	160	**991**	**1130**	995	1130	990	1130
483.xalancbmk	160	**694**	**1590**	693	1590	694	1590	160	**694**	**1590**	693	1590	694	1590

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 Thu Jan 31 14:04:11 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- 8870 @ 2.40GHz
         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 8 9 16 17 18 24 25
      physical 1: cores 0 1 2 8 9 16 17 18 24 25
      physical 2: cores 0 1 2 8 9 16 17 18 24 25
      physical 3: cores 0 1 2 8 9 16 17 18 24 25
      physical 4: cores 0 1 2 8 9 16 17 18 24 25
      physical 5: cores 0 1 2 8 9 16 17 18 24 25
      physical 6: cores 0 1 2 8 9 16 17 18 24 25
      physical 7: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 30720 KB

From /proc/meminfo
   MemTotal:       2117589300 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 31 11:19

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 01/16/2013
  Memory:
   128x   16 GB
   128x Hyundai HMT42GR7BMR4C-H9 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:
    128x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank
```

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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:

        403.gcc: -Dalloca=_alloca

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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
```

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Peak Optimization Flags (Continued)

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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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