SPEC® CINT2006 Result

Sugon

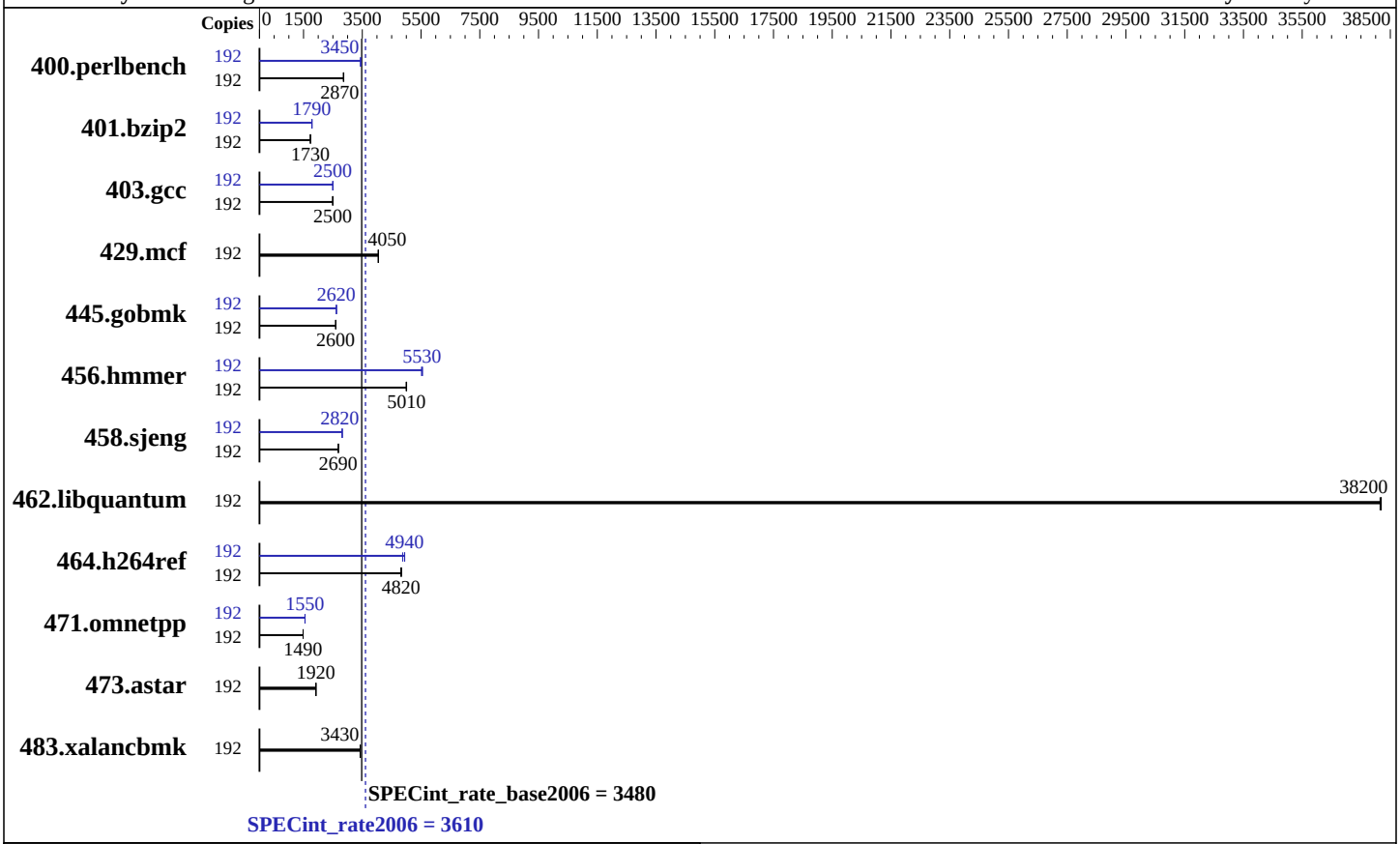
Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECint®_rate2006 = 3610

SPECint_rate_base2006 = 3480

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: May-2016
Hardware Availability: May-2016
Software Availability: May-2016



Hardware

CPU Name:	Intel Xeon E7-8890 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	96 cores, 4 chips, 24 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 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:	60 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	2 x 1 TB, RAID 1
Other Hardware:	None

Software

Operating System:	NeoKylin Linux Advanced Server release V7Update2 (Potassium) 3.10.0-327.el7.x86_64
Compiler:	C/C++: Version 16.0.2.181 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	tmpfs
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.2

SPEC CINT2006 Result

Sugon

Sugon I840-G25 (Intel Xeon E7-8890 v4)

SPECint_rate2006 = 3610

SPECint_rate_base2006 = 3480

CPU2006 license: 9046
Test sponsor: Sugon
Tested by: Sugon

Test date: May-2016
Hardware Availability: May-2016
Software Availability: May-2016

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	192	654	2870	657	2850	**655**	**2870**	192	**544**	**3450**	545	3440	544	3450
401.bzip2	192	**1069**	**1730**	1068	1740	1069	1730	192	**1037**	**1790**	1036	1790	1039	1780
403.gcc	192	**619**	**2500**	618	2500	621	2490	192	620	2490	**619**	**2500**	617	2500
429.mcf	192	433	4040	432	4050	**432**	**4050**	192	433	4040	432	4050	**432**	**4050**
445.gobmk	192	775	2600	**775**	**2600**	777	2590	192	**770**	**2620**	768	2620	770	2620
456.hmmer	192	359	4990	358	5010	**358**	**5010**	192	323	5550	**324**	**5530**	325	5520
458.sjeng	192	**865**	**2690**	865	2690	865	2680	192	**825**	**2820**	825	2820	825	2820
462.libquantum	192	**104**	**38200**	104	38100	104	38200	192	**104**	**38200**	104	38100	104	38200
464.h264ref	192	**882**	**4820**	882	4820	878	4840	192	872	4870	859	4940	**860**	**4940**
471.omnetpp	192	**808**	**1490**	808	1490	808	1480	192	**774**	**1550**	773	1550	775	1550
473.astar	192	702	1920	701	1920	**702**	**1920**	192	702	1920	701	1920	**702**	**1920**
483.xalancbmk	192	385	3440	**387**	**3430**	387	3430	192	385	3440	**387**	**3430**	387	3430

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"
Package C State limit set as "C0/C1 state"
Enhanced Halt State (C1E) set as "Disable"
Energy Performance BIAS setting. set as "Performance"
ACPI T-States set as "Disable"
```

Platform Notes

```
 Sysinfo program /cpu2006/config/sysinfo.rev6914
 $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
 running on I840G25 Thu May  5 18:50:16 2016

 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 E7-8890 v4 @ 2.20GHz
       4 "physical id"s (chips)
       192 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
```

Continued on next page

Platform Notes (Continued)

```
      following excerpts from /proc/cpuinfo might not be reliable.  Use with
      caution.)
         cpu cores : 24
         siblings  : 48
         physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
         27 28 29
         physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
         27 28 29
         physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
         27 28 29
         physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
         27 28 29
      cache size : 30720 KB

   From /proc/meminfo
      MemTotal:       1056727052 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      NeoKylin Linux Advanced Server release V7Update2 (Potassium)

   From /etc/*release* /etc/*version*
      neokylin-release: NeoKylin Linux Advanced Server release V7Update2
      (Potassium)
      os-release:
         NAME="NeoKylin Linux Advanced Server"
         VERSION="V7Update2 (Potassium)"
         ID="neokylin"
         ID_LIKE="fedora"
         VERSION_ID="V7Update2"
         PRETTY_NAME="NeoKylin Linux Advanced Server V7Update2 (Potassium)"
         ANSI_COLOR="0;31"
         CPE_NAME="cpe:/o:neokylin:enterprise_linux:V7Update2:GA:server"
      system-release: NeoKylin Linux Advanced Server release V7Update2 (Potassium)
      system-release-cpe: cpe:/o:neokylin:enterprise_linux:v7update2:ga:server

   uname -a:
      Linux I840G25 3.10.0-327.el7.x86_64 #1 SMP Thu Nov 26 13:46:27 CST 2015
      x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 May 5 17:55

   SPEC is set to: /cpu2006
      Filesystem     Type   Size  Used Avail Use% Mounted on
      tmpfs          tmpfs  2.0T  3.2G  2.0T   1% /cpu2006
   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.
```

Continued on next page

Platform Notes (Continued)

```
    BIOS American Megatrends Inc. 3.0 05/02/2016
    Memory:
     64x Hynix HMA42GR7MFR4N-TFTD 16 GB 2 rank 2133 MHz, configured at 1600 MHz
     32x 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 = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"

 Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB
 memory using RedHat EL 7.2 glibc 2.17
 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/compilers_and_libraries_2016.2.181/linux/compiler/lib/ia32_lin
```

C++ benchmarks:

```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016.2.181/linux/compiler/lib/ia32_lin
```

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

C++ benchmarks:
`-xCORE-AVX2 -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 -L/opt/intel/compilers_and_libraries_2016.2.181/linux/compiler/lib/ia32_lin`

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
`icpc -m32 -L/opt/intel/compilers_and_libraries_2016.2.181/linux/compiler/lib/ia32_lin`

Peak Portability Flags

400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
401.bzip2: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
403.gcc: `-D_FILE_OFFSET_BITS=64`
429.mcf: `-D_FILE_OFFSET_BITS=64`
445.gobmk: `-D_FILE_OFFSET_BITS=64`
456.hmmer: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
458.sjeng: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64`
462.libquantum: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`
464.h264ref: `-D_FILE_OFFSET_BITS=64`
471.omnetpp: `-D_FILE_OFFSET_BITS=64`
473.astar: `-D_FILE_OFFSET_BITS=64`

Continued on next page

Peak Portability Flags (Continued)

483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -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:threadsafe(pass 1) -prof-use(pass 2) -par-num-threads=1(pass 1) -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:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -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-ic16.0-official-linux64.html`
`http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-BDW-revB.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml`
`http://www.spec.org/cpu2006/flags/Sugon-Platform-Settings-V1.2-BDW-revB.xml`

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jun 30 13:53:27 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 June 2016.