SPEC® CINT2006 Result

Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECint®2006 =   59.7

SPECint_base2006 =   56.3

CPU2006 license: 9019
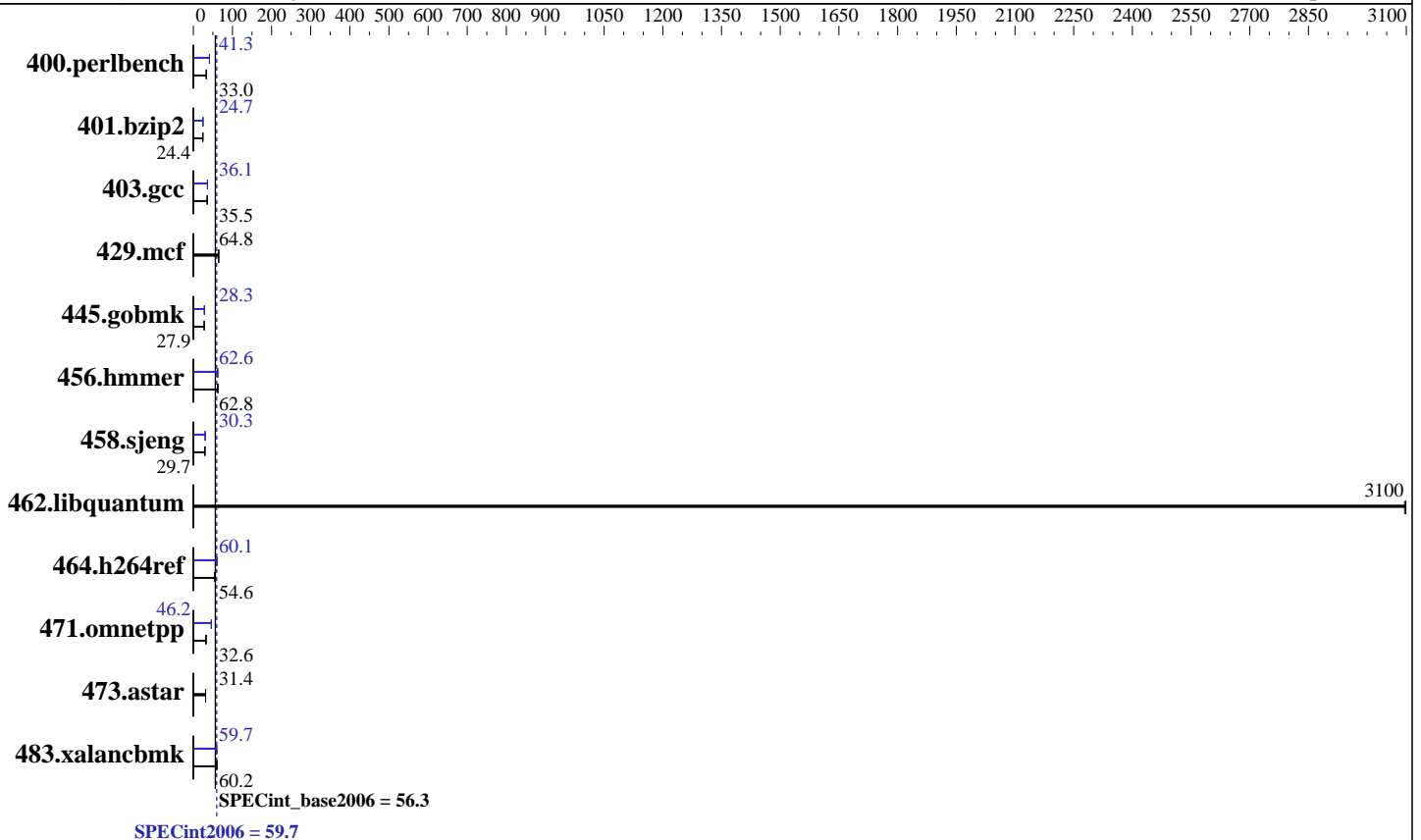**Test sponsor:** Cisco Systems
Tested by: Cisco Systems

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Graph results:
- 400.perlbench: 41.3 / 33.0
- 401.bzip2: 24.7 / 24.4
- 403.gcc: 36.1 / 35.5
- 429.mcf: 64.8
- 445.gobmk: 28.3 / 27.9
- 456.hmmer: 62.6 / 62.8
- 458.sjeng: 30.3 / 29.7
- 462.libquantum: 3100
- 464.h264ref: 60.1 / 54.6
- 471.omnetpp: 46.2 / 32.6
- 473.astar: 31.4
- 483.xalancbmk: 59.7 / 60.2

SPECint_base2006 = 56.3

SPECint2006 = 59.7

Hardware

CPU Name:	Intel Xeon E5-2667 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	1,2 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:	25 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem:	1 X 300 GB 15000 RPM SAS
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 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 V10.0

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**296**	**33.0**	296	33.0	296	33.0	237	41.2	**237**	**41.3**	237	41.3
401.bzip2	396	24.4	**395**	**24.4**	395	24.4	391	24.7	391	24.7	**391**	**24.7**
403.gcc	227	35.5	**227**	**35.5**	227	35.5	223	36.1	**223**	**36.1**	223	36.1
429.mcf	141	64.8	**141**	**64.8**	141	64.8	141	64.8	**141**	**64.8**	141	64.8
445.gobmk	**377**	**27.9**	377	27.9	377	27.8	371	28.3	371	28.3	**371**	**28.3**
456.hmmer	150	62.2	148	62.9	**149**	**62.8**	153	61.1	**149**	**62.6**	148	62.8
458.sjeng	**407**	**29.7**	408	29.7	407	29.7	400	30.3	400	30.3	**400**	**30.3**
462.libquantum	6.69	3100	6.69	3100	**6.69**	**3100**	6.69	3100	6.69	3100	**6.69**	**3100**
464.h264ref	**405**	**54.6**	405	54.7	405	54.6	**368**	**60.1**	368	60.1	368	60.2
471.omnetpp	**192**	**32.6**	191	32.7	193	32.3	137	45.8	135	46.4	**135**	**46.2**
473.astar	223	31.4	224	31.4	**223**	**31.4**	223	31.4	224	31.4	**223**	**31.4**
483.xalancbmk	117	59.1	**115**	**60.2**	114	60.4	116	59.6	116	59.7	**116**	**59.7**

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 Settings:
Intel HT Technology = Disabled
CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Enabled
CPU Power State C1 Enhanced set to Disabled
Energy Performance policy set to Performance
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
LV DDR Mode set to Performance-mode
DRAM Refresh Rate Set to 1x
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on rhel6.4-speed Fri Oct 11 15:20:00 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 E5-2667 v2 @ 3.30GHz
       2 "physical id"s (chips)
       16 "processors"
```

Continued on next page

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Platform Notes (Continued)

```
    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 : 8
       siblings  : 8
       physical 0: cores 1 2 3 4 8 9 10 11
       physical 1: cores 1 2 3 4 8 9 10 11
    cache size : 25600 KB

  From /proc/meminfo
     MemTotal:       264459936 kB
     HugePages_Total:        0
     Hugepagesize:        2048 kB

  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.4 (Santiago)

  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

  uname -a:
     Linux rhel6.4-speed 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Oct 11 15:03

  SPEC is set to: /opt/cpu2006-1.2
     Filesystem     Type     Size  Used Avail Use% Mounted on
     /dev/sdb1      ext4     275G   71G  190G  28% /

  Additional information from dmidecode:
    BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013
    Memory:
     16x 0xAD00 HMT42GR7AFR4C-RD 16 GB 1866 MHz 2 rank

  (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
 OMP_NUM_THREADS = "16"

  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
```

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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/sh -lsmartheap64

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m64

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Peak Compiler Invocation (Continued)

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.hmmer: -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

     403.gcc: -xSSE4.2 -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
```

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Peak Optimization Flags (Continued)

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

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

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/sh -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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.xml

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

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