SPEC® CINT2006 Result

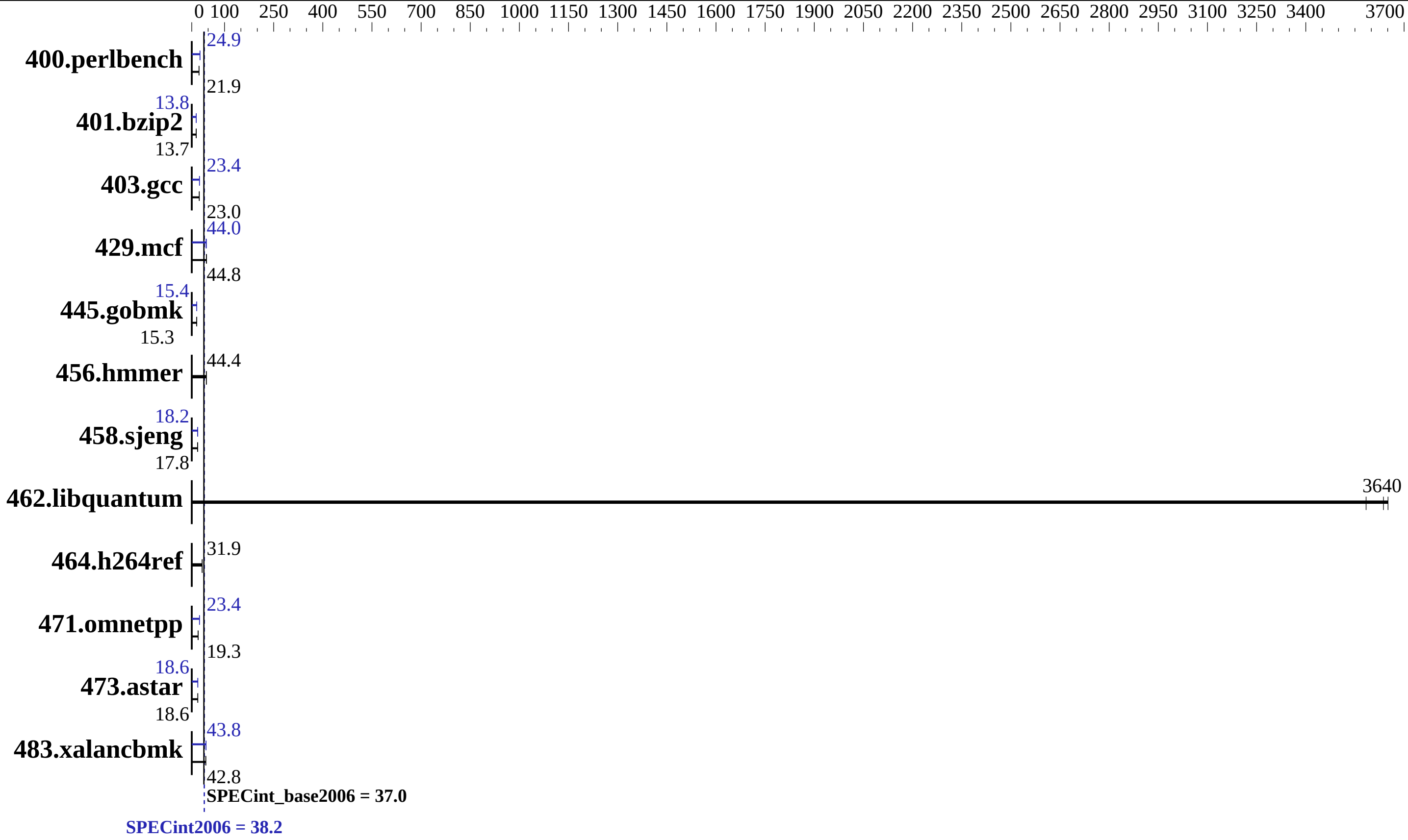
Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECint®2006 = 38.2

SPECint_base2006 = 37.0

CPU2006 license:	9019	**Test date:**	Dec-2017
Test sponsor:	Cisco Systems	**Hardware Availability:**	Aug-2017
Tested by:	Cisco Systems	**Software Availability:**	Jul-2017



Hardware

CPU Name:	Intel Xeon Bronze 3106
CPU Characteristics:	
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core
L3 Cache:	11 MB I+D on chip per chip
Other Cache:	None
Memory:	384 GB (24 x 16 GB 2Rx4 PC4-2666V-R, running at 2133)
Disk Subsystem:	1 x 600 GB SAS HDD, 10K RPM
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 7.3 (Maipo) 3.10.0-514.el7.x86_64
Compiler:	C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux
Auto Parallel:	Yes
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.2

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Results Table

	Base						Peak					
Benchmark	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**446**	**21.9**	445	21.9	446	21.9	393	24.9	392	24.9	**393**	**24.9**
401.bzip2	**706**	**13.7**	706	13.7	706	13.7	699	13.8	**698**	**13.8**	698	13.8
403.gcc	349	23.1	**349**	**23.0**	349	23.0	**344**	**23.4**	344	23.4	344	23.4
429.mcf	204	44.7	**203**	**44.8**	203	44.8	**207**	**44.0**	209	43.7	203	44.8
445.gobmk	**686**	**15.3**	686	15.3	686	15.3	**680**	**15.4**	680	15.4	680	15.4
456.hmmer	209	44.7	**210**	**44.4**	211	44.3	209	44.7	**210**	**44.4**	211	44.3
458.sjeng	679	17.8	**679**	**17.8**	679	17.8	666	18.2	666	18.2	**666**	**18.2**
462.libquantum	5.78	3580	**5.70**	**3640**	5.68	3650	5.78	3580	**5.70**	**3640**	5.68	3650
464.h264ref	693	32.0	693	31.9	**693**	**31.9**	693	32.0	693	31.9	**693**	**31.9**
471.omnetpp	**324**	**19.3**	326	19.2	323	19.3	267	23.4	**267**	**23.4**	267	23.4
473.astar	377	18.6	**378**	**18.6**	380	18.5	378	18.6	**378**	**18.6**	378	18.6
483.xalancbmk	161	42.8	161	42.8	**161**	**42.8**	158	43.8	158	43.7	**158**	**43.8**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used.
```

Operating System Notes

```
 Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS Settings:
CPU performance set to Enterprise
Power Performance Tuning set to OS Controls
SNC set to Disabled
Patrol Scrub set to Disabled
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on localhost.localdomain Sun Dec 17 22:22:39 2017

 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) Bronze 3106 CPU @ 1.70GHz
       2 "physical id"s (chips)
       16 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
```

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Platform Notes (Continued)

```
      caution.)
         cpu cores : 8
         siblings  : 8
         physical 0: cores 0 1 2 3 4 5 6 7
         physical 1: cores 0 1 2 3 4 5 6 7
      cache size : 11264 KB

   From /proc/meminfo
      MemTotal:       394670252 kB
      HugePages_Total:       0
      Hugepagesize:       2048 kB

   From /etc/*release* /etc/*version*
      os-release:
         NAME="Red Hat Enterprise Linux Server"
         VERSION="7.3 (Maipo)"
         ID="rhel"
         ID_LIKE="fedora"
         VERSION_ID="7.3"
         PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
         ANSI_COLOR="0;31"
         CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
      redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
      system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

   uname -a:
      Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
      EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jan 5 00:07

   SPEC is set to: /opt/cpu2006-1.2
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sdb2      xfs   130G   16G  115G  12% /
   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 Cisco Systems, Inc. B200M5.3.2.1d.5.0727171353 07/27/2017Cisco Systems,
     Inc. B200M5.3.2.1d.5.0727171353 07/27/2017
     Memory:
      48x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz, configured at 2133 MHz

   (End of data from sysinfo program)
   The correct amount of Memory installed is 384 GB (24 x 16 GB)
   and the dmidecode is reporting invalid number of DIMMs installed
   Installed Memory:
   24x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/lib/ia32:/opt/cpu2006-1.2/lib/intel64:/opt/cpu2006-1.2/sh10.2"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
 No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
 is mitigated in the system as tested and documented.
 No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
 is mitigated in the system as tested and documented.
 No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
 is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on
past performance using the historical hardware and/or
software described on this result page.

The system as described on this result page was formerly
generally available.  At the time of this publication, it may
not be shipping, and/or may not be supported, and/or may fail
to meet other tests of General Availability described in the
SPEC OSG Policy document, http://www.spec.org/osg/policy.html

This measured result may not be representative of the result
that would be measured were this benchmark run with hardware
and software available as of the publication date.
```

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

Continued on next page

Base Portability Flags (Continued)

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:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch -auto-p32`

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64`

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

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

400.perlbench: `icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

445.gobmk: `icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

C++ benchmarks (except as noted below):
`icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32`

473.astar: `icpc -m64`

Peak Portability Flags

400.perlbench: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`

Continued on next page

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Peak Portability Flags (Continued)

429.mcf: -DSPEC_CPU_LP64
445.gobmk: -D_FILE_OFFSET_BITS=64
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: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

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

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

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc -qopt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch -auto-p32

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)

456.hmmer: basepeak = yes

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2(pass 2) -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -qopt-ra-region-strategy=block -Wl,-z,muldefs -L/sh10.2 -lsmartheap

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Peak Optimization Flags (Continued)

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh10.2 -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -Wl,-z,muldefs -L/sh10.2 -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-ic17.0-official-linux64-revF.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revH.xml

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

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