



SPEC® CINT2006 Result

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Cisco Systems

Cisco UCS B200 M5 (Intel Xeon Platinum 8156, 3.60GHz)

SPECint®2006 = 74.2

SPECint_base2006 = 70.9

CPU2006 license: 9019

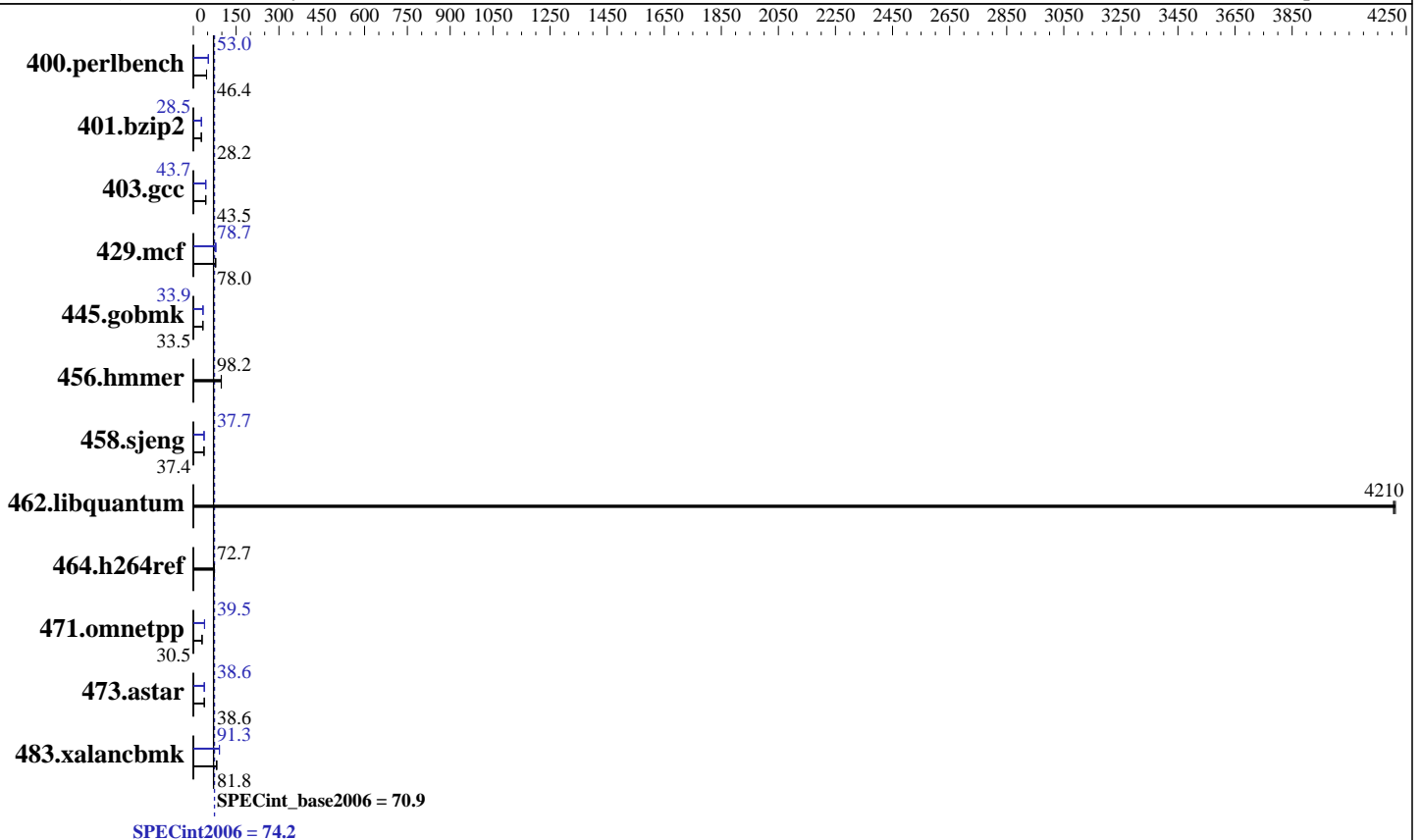
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Sep-2017

Hardware Availability: Aug-2017

Software Availability: Apr-2017



Hardware

CPU Name: Intel Xeon Platinum 8156
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz: 3600
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 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: 16.5 MB I+D on chip per chip
Other Cache: None
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 1 x 600 GB SAS HDD, 10K RPM
Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 12 SP2 (x86_64) 4.4.21-69-default
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

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	210	46.5	211	46.2	<u>211</u>	<u>46.4</u>	188	52.0	184	53.0	<u>184</u>	<u>53.0</u>
401.bzip2	343	28.1	342	28.2	<u>342</u>	<u>28.2</u>	<u>339</u>	<u>28.5</u>	339	28.4	339	28.5
403.gcc	184	43.7	<u>185</u>	<u>43.5</u>	185	43.5	<u>184</u>	<u>43.7</u>	186	43.4	184	43.8
429.mcf	116	78.5	<u>117</u>	<u>78.0</u>	117	77.8	<u>116</u>	<u>78.7</u>	118	77.0	115	79.2
445.gobmk	<u>313</u>	<u>33.5</u>	313	33.5	313	33.5	<u>310</u>	<u>33.9</u>	310	33.9	309	33.9
456.hammer	95.0	98.2	<u>95.0</u>	<u>98.2</u>	95.4	97.8	95.0	98.2	<u>95.0</u>	<u>98.2</u>	95.4	97.8
458.sjeng	<u>324</u>	<u>37.4</u>	324	37.4	324	37.3	320	37.8	323	37.4	<u>321</u>	<u>37.7</u>
462.libquantum	4.93	4210	4.92	4210	<u>4.92</u>	<u>4210</u>	4.93	4210	4.92	4210	<u>4.92</u>	<u>4210</u>
464.h264ref	305	72.5	304	72.7	<u>304</u>	<u>72.7</u>	305	72.5	304	72.7	<u>304</u>	<u>72.7</u>
471.omnetpp	205	30.4	<u>205</u>	<u>30.5</u>	205	30.6	<u>158</u>	<u>39.5</u>	158	39.6	160	39.0
473.astar	<u>182</u>	<u>38.6</u>	182	38.6	182	38.6	182	38.6	182	38.5	<u>182</u>	<u>38.6</u>
483.xalancbmk	84.7	81.4	84.0	82.1	<u>84.4</u>	<u>81.8</u>	75.7	91.1	<u>75.6</u>	<u>91.3</u>	75.2	91.7

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:
 Intel HyperThreading Technology set to Disabled
 CPU performance set to Enterprise
 Power Performance Tuning set to OS
 SNC set to Disabled
 IMC Interleaving set to Auto
 Patrol Scrub set to Disabled
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6993
 Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
 running on linux-djj4 Wed Sep 27 15:52:44 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) Platinum 8156 CPU @ 3.60GHz
2 "physical id"s (chips)
8 "processors"
```

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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 : 4
siblings  : 4
physical 0: cores 0 5 9 13
physical 1: cores 1 5 9 13
cache size : 16896 KB
```

From /proc/meminfo

```
MemTotal:      394667836 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

From /etc/*release* /etc/*version*

SuSE-release:

```
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
```

This file is deprecated and will be removed in a future service pack or release.

Please check /etc/os-release for details about this release.

os-release:

```
NAME="SLES"
VERSION="12-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

uname -a:

```
Linux linux-djj4 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Jan 15 18:21

SPEC is set to: /opt/cpu2006-1.2

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal        xfs       559G  46G  513G   9% /
```

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 07/27/2017

Memory:

24x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)



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General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = */opt/intel/compilers_and_libraries_2018.0.128/linux/compiler/lib/ia32:/opt/intel/compilers_and_libraries_2018.0.128/linux/compiler/lib/intel64:/opt/cpu2006-1.2/sh10.2*

OMP_NUM_THREADS = "8"

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

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.hmmmer: -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:

-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/opt/cpu2006-1.2/sh10.2 -lsmartheap64



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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

429.mcf: -DSPEC_CPU_LP64

445.gobmk: -D_FILE_OFFSET_BITS=64

456.hmmmer: -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

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Peak Optimization Flags (Continued)

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.hmmr: 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/opt/cpu2006-1.2/sh10.2 -lsmarheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-auto-p32 -Wl,-z,muldefs
-L/opt/cpu2006-1.2/sh10.2 -lsmarheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/opt/cpu2006-1.2/sh10.2 -lsmarheap

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>



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