# Cisco Systems

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECint&lt;sup&gt;®&lt;/sup&gt;2006</th>
<th>SPECint&lt;sub&gt;base&lt;/sub&gt;2006</th>
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<td>401.bzip2</td>
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<td>429.mcf</td>
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<td>39.5</td>
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<tr>
<td>471.omnetpp</td>
<td>38.6</td>
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<td>473.astar</td>
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</tr>
<tr>
<td>483.xalancbmk</td>
<td>81.8</td>
<td>81.5</td>
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</table>

**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
- **Memory:** 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)
- **Disk Subsystem:** 1 x 600 GB SAS HDD, 10K RPM
- **Other Cache:** 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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**Test date:** Sep-2017

**Hardware Availability:** Aug-2017

**Test sponsor:** Cisco Systems

**Software Availability:** Apr-2017

**Tested by:** Cisco Systems

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**CPU2006 license:** 9019

**Test date:** Sep-2017

**Hardware Availability:** Aug-2017

**Test sponsor:** Cisco Systems

**Software Availability:** Apr-2017

**Tested by:** Cisco Systems
Results Table

<table>
<thead>
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<th>Benchmark</th>
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</tr>
</tbody>
</table>

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 (b5e8d4b4eb5ed28d7f98696cbe290c1)
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"

Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Platinum 8156, 3.60GHz)

| SPECint2006 = | 74.2 |
| SPECint_base2006 = | 70.9 |

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

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:

```
(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/sda1 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)
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Platinum 8156, 3.60GHz)

SPECint2006 = 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

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.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:
  -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 -W1,-z,muldefs -L/opt/cpu2006-1.2/sh10.2 -ismartheap64
## SPEC CINT2006 Result

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

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

**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.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 
```

Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Platinum 8156, 3.60GHz)

SPECint2006 =  74.2
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CPU2006 license: 9019
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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)

462.libquantum: 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 -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-auto-p32 -Wl,-z,muldefs
-L/opt/cpu2006-1.2/sh10.2 -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-Wl,-z,muldefs -L/opt/cpu2006-1.2/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
## Cisco Systems

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

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For other inquiries, please contact webmaster@spec.org.

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