**Cisco Systems**

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

<table>
<thead>
<tr>
<th>Software</th>
<th>SPECfp₂₀₀₆ = 75.3</th>
<th>SPECfp_base₂₀₀₆ = 73.8</th>
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<table>
<thead>
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<th>SPECfp₂₀₀₆</th>
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<tr>
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<td>465.tonto</td>
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<td>470.lbm</td>
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<td>450</td>
</tr>
<tr>
<td>482.sphinx3</td>
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</table>

**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

**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;
  Fortran: Version 17.0.3.191 of Intel Fortran Compiler for Linux
- **Auto Parallel:** Yes
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
## SPEC CFP2006 Result

**Cisco Systems**

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

### SPECfp2006

<table>
<thead>
<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>579</td>
<td>33.7</td>
</tr>
</tbody>
</table>

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:
- CPU performance set to Enterprise
- Power Performance Tuning set to OS Controls
- SNC set to Disabled
- Patrol Scrub set to Disabled
- Sysinfo program: /home/cpu2006-1.2/config/sysinfo.rev6993
- Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
- running on linux Sat Dec 16 19:20:43 2017

Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp2006 = 75.3
SPECfp_base2006 = 73.8

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

Test date: Dec-2017
Hardware Availability: Aug-2017
Software Availability: Jul-2017

Platform Notes (Continued)

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 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: 394667604 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 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 3 20:09

SPEC is set to: /home/cpu2006-1.2
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/sda1 xfs 280G 146G 135G 53% /

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
Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp2006 = 75.3
SPECfp_base2006 = 73.8

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

Platform Notes (Continued)

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, configured at 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006-1.2/lib/ia32:/home/cpu2006-1.2/lib/intel64:/home/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

Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp2006 = 75.3
SPECfp_base2006 = 73.8

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

Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch

Peak Compiler Invocation

C benchmarks:
icc -m64

Continued on next page
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp2006 = 75.3
SPECfp_base2006 = 73.8

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

Test date: Dec-2017
Hardware Availability: Aug-2017
Software Availability: Jul-2017

Peak Compiler Invocation (Continued)

C++ benchmarks:
   icpc -m64

Fortran benchmarks:
   ifort -m64

Benchmarks using both Fortran and C:
   icc -m64 ifort -m64

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
   433.milc: basepeak = yes
   470.lbm: basepeak = yes
   482.sphinx3: basepeak = yes

C++ benchmarks:
   444.namd: -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) -fno-alias -auto-ilp32
   447.dealII: basepeak = yes
   450.soplex: basepeak = yes
   453.povray: -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 -ansi-alias

Fortran benchmarks:
   410.bwaves: basepeak = yes
   416.gamess: -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) -unroll2 -inline-level=0 -scalar-rep-
Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Bronze 3106, 1.70 GHz)

SPECfp2006 = 75.3
SPECfp_base2006 = 73.8

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

**Peak Optimization Flags (Continued)**

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -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) -unroll2 -inline-level=0
-qopt-prefetch -parallel
465.tonto: -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) -inline-calloc -qopt-malloc-options=3
-auto -unroll4

Benchmarks using both Fortran and C:
435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-1lp32
481.wrf: basepeak = yes

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

Tested with SPEC CPU2006 v1.2.
Originally published on 23 February 2018.