**Cisco Systems**
Cisco UCS C480 M5 (Intel Xeon Gold 6262V, 1.90GHz)

**CPU2017 License:** 9019  
**Test Sponsor:** Cisco Systems  
**Tested by:** Cisco Systems  
**Test Date:** Oct-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** May-2019

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### Threads

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<tr>
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<th>SPECspeed©2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>182</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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### Hardware

- **CPU Name:** Intel Xeon Gold 6262V  
- **Max MHz:** 3600  
- **Nominal:** 1900  
- **Enabled:** 96 cores, 4 chips  
- **Orderable:** 2,4 Chips  
- **Cache L1:** 32 KB I+ 32 KB D on chip per core  
- **Cache L2:** 1 MB I+D on chip per core  
- **Cache L3:** 33 MB I+D on chip per chip  
- **Others:** None  
- **Memory:** 1536 GB (48 x 32 GB 2Rx4 PC4-2933V-R, running at 2400)  
- **Storage:** 1 x 300 GB 15K RPM SAS HDD  
- **Others:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15 (x86_64)  
  4.12.14-23-default  
- **Compiler:** C/C++: Version 19.0.4.227 of Intel C/C++ Compiler for Linux;  
  Fortran: Version 19.0.4.227 of Intel Fortran Compiler for Linux  
- **Parallel:** Yes  
- **Firmware:** Version 4.0.3 released Mar-2019  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** Not Applicable  
- **Other:** None  
- **Power Management:** default
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Results Table

<table>
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</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"

Environment Variables Notes
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64"
OMP_STACKSIZE = "192M"

General Notes
Binaries compiled on a system with 1x Intel Core i9-799X CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.5
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: 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.
Yes: 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.
Cisco Systems
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SPECspeed®2017_fp_base = 182
SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

Platform Notes

BIOS Settings:
Intel HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS Controls
SNC set to Disabled
Patrol Scrub set to Disabled

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed1b6e64a485a0011
running on linux-loz2 Sat Oct 19 23:45:59 2019

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Gold 6262V CPU @ 1.90GHz
   4 "physical id"s (chips)
   96 "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 : 24
  siblings : 24
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
    physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 96
On-line CPU(s) list: 0-95
Thread(s) per core: 1
Core(s) per socket: 24
Socket(s): 4
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6262V CPU @ 1.90GHz
Stepping: 7
CPU MHz: 1900.000
CPU max MHz: 3600.0000
CPU min MHz: 800.0000
BogoMIPS: 3800.00

(Continued on next page)
Cisco Systems
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Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 33792K
NUMA node0 CPU(s): 0-23
NUMA node1 CPU(s): 24-47
NUMA node2 CPU(s): 48-71
NUMA node3 CPU(s): 72-95

Flags: fpu vme de pse tsc msr pae mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single mba tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rd救人 avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occult_llc cqm_mbb_total cqm_mbb_local ibpb ibrs stibp dtherm ida arat pinn pts hwp hwp_act_window hwp_epp hwp_pkg_req pkx ospke avx512_vnni arch_capabilities ssbd

/proc/cpuinfo cache data
  cache size : 33792 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
    node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
    node 0 size: 385625 MB
    node 0 free: 385309 MB
    node 1 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
    node 1 size: 387056 MB
    node 1 free: 382789 MB
    node 2 cpus: 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71
    node 2 size: 387028 MB
    node 2 free: 386856 MB
    node 3 cpus: 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
    node 3 size: 387054 MB
    node 3 free: 386724 MB
    node distances:
      node 0 1 2 3
        0: 10 21 21 21
        1: 21 10 21 21
        2: 21 21 10 21
        3: 21 21 21 10

(Continued on next page)
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SPECspeed®2017_fp_base = 182
SPECspeed®2017_fp_peak = Not Run
Test Date: Oct-2019
Hardware Availability: Apr-2019
Software Availability: May-2019

Platform Notes (Continued)

From /proc/meminfo
MemTotal: 1583887228 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="SLES"
VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

uname -a:
Linux linux-lozz 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault): No status reported
Microarchitectural Data Sampling: No status reported
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation, IBPB, IBRS_FW

run-level 3 Oct 19 21:19

SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 273G 44G 229G 17% /

From /sys/devices/virtual/dmi/id
BIOS: Cisco Systems, Inc. C480M5.4.0.3.32.0301190121 03/01/2019
Vendor: Cisco
Product: UCSC-C480-M5
Serial: FCH2227W00H

Additional information from dmidecode follows. 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.

(Continued on next page)
Cisco Systems
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SPEC™2017 Floating Point Speed Result
Copyright 2017-2019 Standard Performance Evaluation Corporation

CPU2017 License: 9019
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<table>
<thead>
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Test Date: Oct-2019
Hardware Availability: Apr-2019
Software Availability: May-2019

Platform Notes (Continued)

Memory:
48x 0xCE00 M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2400

(End of data from sysinfo program)

Compiler Version Notes

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<tr>
<th>C</th>
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<tr>
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Compiler Version Notes (Continued)

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP

Fortran benchmarks:
-DSPEC_OPENMP -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-nostandard-realloc-lhs

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SPEC CPU®2017 Floating Point Speed Result

SPECspeed®2017_fp_base = 182
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**Cisco Systems**

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**Base Optimization Flags (Continued)**

Benchmarks using both Fortran and C:
- -xCORE-AVX512
- -ipo
- -O3
- -no-prec-div
- -gopt-prefetch
- -ffinite-math-only
- -gopt-mem-layout-trans=4
- -qopenmp
- -DSPEC_OPENMP
- -nostandard-realloc-lhs

Benchmarks using Fortran, C, and C++:
- -xCORE-AVX512
- -ipo
- -O3
- -no-prec-div
- -gopt-prefetch
- -ffinite-math-only
- -gopt-mem-layout-trans=4
- -qopenmp
- -DSPEC_OPENMP
- -nostandard-realloc-lhs

The flags files that were used to format this result can be browsed at


You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.2-revJ.xml

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

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