## SPEC CPU®2017 Floating Point Speed Result

**Cisco Systems**  
Cisco UCS C240 M5 (Intel Xeon Gold 6142M 2.60 GHz)  

<table>
<thead>
<tr>
<th>软件</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
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<tbody>
<tr>
<td>CPU2017 License</td>
<td>9019</td>
<td>Not Run</td>
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<td>Cisco Systems</td>
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</table>

### Hardware

- **CPU Name**: Intel Xeon Gold 6142M  
- **Max MHz**: 3700  
- **Nominal**: 2600  
- **Enabled**: 32 cores, 2 chips  
- **Orderable**: 1.2 Chips  
- **Cache L1**: 32 KB I + 32 KB D on chip per core  
- **L2**: 1 MB I+D on chip per core  
- **L3**: 22 MB I+D on chip per chip  
- **Memory**: 768 GB (24 x 32 GB 2Rx4 PC4-2666V-R)  
- **Storage**: 1 x 600G SAS 10K RPM  
- **Other**: None  

### Software

- **OS**: SUSE Linux Enterprise Server 12 SP2 (x86_64)  
  4.4.120-92.70-default  
- **Compiler**: C/C++: Version 19.0.1.144 of Intel C/C++ Compiler for Linux;  
  Fortran: Version 19.0.1.144 of Intel Fortran Compiler for Linux  
- **Parallel**: Yes  
- **Firmware**: Version 4.0.1 released Oct-2018  
- **File System**: xfs  
- **System State**: Run level 3 (multi-user)  
- **Base Pointers**: 64-bit  
- **Peak Pointers**: Not Applicable  
- **Other**: None  
- **Power Management**: --
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Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Base</th>
<th>Peak</th>
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<tr>
<td>603.bwaves_s</td>
<td>32</td>
<td>127 465</td>
<td>127 466</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>32</td>
<td>123 135</td>
<td>123 135</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>32</td>
<td>106 124</td>
<td>107 83.1</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>32</td>
<td>106 83.3</td>
<td>107 83.0</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>32</td>
<td>173 68.6</td>
<td>174 68.2</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>32</td>
<td>143 101</td>
<td>143 101</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>32</td>
<td>115 79.2</td>
<td>114 79.9</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>32</td>
<td>106 149</td>
<td>106 149</td>
</tr>
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</table>

SPECspeed®2017_fp_base = 125
SPECspeed®2017_fp_peak = Not Run

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"

General Notes
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64"
OMP_STACKSIZE = "192M"

Biaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.4
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
Yes: 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.

Platform Notes
BIOS Settings:
Intel HyperThreading Technology set to Disabled
CPU performance set to Enterprise
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**Platform Notes (Continued)**

Power Performance Tuning set to OS Controls  
SNC set to Disabled  
Patrol Scrub set to Disabled  
Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618b0c091c0f  
runtime on linux-dkz7 Fri Dec 7 06:13:42 2018

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 6142M CPU @ 2.60GHz
   2 "physical id"s (chips)
   32 "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 : 16
   siblings : 16
   physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
   physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu:
   Architecture: x86_64
   CPU op-mode(s): 32-bit, 64-bit
   Byte Order: Little Endian
   CPU(s): 32
   On-line CPU(s) list: 0-31
   Thread(s) per core: 1
   Core(s) per socket: 16
   Socket(s): 2
   NUMA node(s): 2
   Vendor ID: GenuineIntel
   CPU family: 6
   Model: 85
   Model name: Intel(R) Xeon(R) Gold 6142M CPU @ 2.60GHz
   Stepping: 4
   CPU MHz: 2627.612
   CPU max MHz: 3700.0000
   CPU min MHz: 1000.0000
   BogoMIPS: 5187.80
   Virtualization: VT-x
   L1d cache: 32K
   L1i cache: 32K
   L2 cache: 1024K
   L3 cache: 22528K
   NUMA node0 CPU(s): 0-15

(Continued on next page)
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Platform Notes (Continued)

NUMA nodel CPU(s): 16-31
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 cclfush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmpref eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtrr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_l1m abm 3dnowprefetch ida arat epb invpcid_single pln pts
dtherm hwp hwp_act_window hwp_epp hwp_pkg_req intel_pt rsb_cxsw spec_ctrl stibp
retpoline kaiser tpr_shadow vmmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle
avx2 smep bmi2 erin invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap cflushopt
c1wb avx512cd avx512bw avx512vl xsaveopt xsaveopt xsavec xgetbv1 cqm_llc cqm_occu_llc

/proc/cpuinfo cache data
  cache size : 22528 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
  physical chip.
    available: 2 nodes (0-1)
    node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
    node 0 size: 385626 MB
    node 0 free: 381040 MB
    node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
    node 1 size: 387054 MB
    node 1 free: 383581 MB
    node distances:
      node 0 1
      0: 10 21
      1: 21 10

From /proc/meminfo
  MemTotal: 791225564 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"

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Platform Notes (Continued)

ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
    Linux linux-dkz7 4.4.120-92.70-default #1 SMP Wed Mar 14 15:59:43 UTC 2018 (52a83de)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Dec 7 01:13

SPEC is set to: /home/cpu2017

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      xfs   500G  124G  377G  25% /

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.
    BIOS Cisco Systems, Inc. C240M5.4.0.1.139.1003182220 10/03/2018
Memory:
    12x 0xCE00 M393A4K40BB2-CTD 32 GB 2 rank 2666
    12x 0xCE00 M393A4K40CB2-CTD 32 GB 2 rank 2666

(End of data from sysinfo program)

Compiler Version Notes

C | 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
---------------
icc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
---------------

C++, C, Fortran | 607.cactuBSSN_s(base)
---------------
icpc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
---------------

Fortran | 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)
(Continued on next page)
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Compiler Version Notes (Continued)

ifort (IFORT) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Fortran, C | 621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)

ifort (IFORT) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

icc (ICC) 19.0.1.144 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

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 byte_recl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64
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### Base Optimization Flags

**C benchmarks:**

- `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP`

**Fortran benchmarks:**

- `-DSPEC_OPENMP -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp`
- `-nostandard-realloc-lhs -align array32byte`

**Benchmarks using both Fortran and C:**

- `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP`
- `-nostandard-realloc-lhs -align array32byte`

**Benchmarks using Fortran, C, and C++:**

- `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP`
- `-nostandard-realloc-lhs -align array32byte`

### Flags Files

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:


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