



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

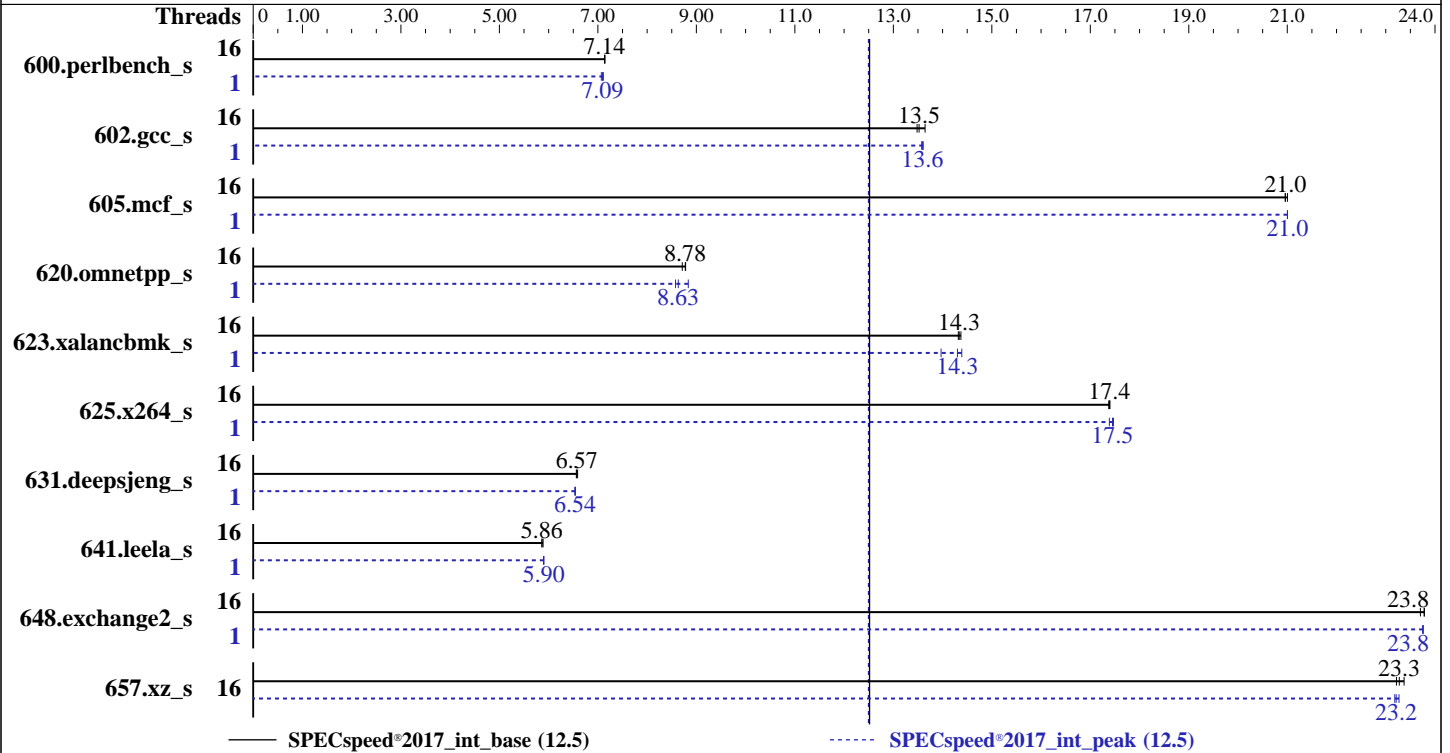
Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021



Hardware

CPU Name: AMD EPYC 7313P
 Max MHz: 3700
 Nominal: 3000
 Enabled: 16 cores, 1 chip
 Orderable: 1 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 512 KB I+D on chip per core
 L3: 128 MB I+D on chip per chip,
 32 MB shared / 4 cores
 Other: None
 Memory: 1 TB (8 x 128 GB 4Rx4 PC4-3200V-L)
 Storage: 1 x 1.6 TB SSD SATA
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP3 (x86_64)
 5.3.18-57-default
 Compiler: C/C++/Fortran: Version 3.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 4.2.1c released Aug-2021
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc: jemalloc memory allocator library v5.1.0
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Dec-2021

Hardware Availability: Jun-2021

Software Availability: Jun-2021

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	16	248	7.15	249	7.13	<u>249</u>	<u>7.14</u>	1	250	7.11	251	7.07	<u>250</u>	<u>7.09</u>
602.gcc_s	16	<u>294</u>	<u>13.5</u>	292	13.6	295	13.5	1	293	13.6	293	13.6	<u>293</u>	<u>13.6</u>
605.mcf_s	16	225	21.0	<u>225</u>	<u>21.0</u>	225	21.0	1	225	21.0	<u>225</u>	<u>21.0</u>	225	21.0
620.omnetpp_s	16	186	8.78	187	8.71	<u>186</u>	<u>8.78</u>	1	190	8.58	<u>189</u>	<u>8.63</u>	185	8.84
623.xalancbmk_s	16	98.6	14.4	99.0	14.3	<u>98.8</u>	<u>14.3</u>	1	<u>99.1</u>	<u>14.3</u>	101	14.0	98.5	14.4
625.x264_s	16	<u>101</u>	<u>17.4</u>	101	17.4	102	17.4	1	<u>101</u>	<u>17.5</u>	101	17.4	101	17.5
631.deepsjeng_s	16	<u>218</u>	<u>6.57</u>	218	6.59	218	6.56	1	219	6.53	219	6.54	<u>219</u>	<u>6.54</u>
641.leela_s	16	<u>291</u>	<u>5.86</u>	291	5.86	290	5.89	1	289	5.90	289	5.90	<u>289</u>	<u>5.90</u>
648.exchange2_s	16	124	23.8	124	23.7	<u>124</u>	<u>23.8</u>	1	124	23.8	<u>124</u>	<u>23.8</u>	124	23.7
657.xz_s	16	266	23.2	264	23.4	<u>266</u>	<u>23.3</u>	16	266	23.3	267	23.2	<u>266</u>	<u>23.2</u>

SPECspeed®2017_int_base = 12.5

SPECspeed®2017_int_peak = 12.5

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

The AMD64 AOCC Compiler Suite is available at <http://developer.amd.com/amd-aocc/>

Submit Notes

The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To enable Transparent Hugepages (THP) for all allocations,

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Operating System Notes (Continued)

```
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and  
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
```

Environment Variables Notes

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

```
GOMP_CPU_AFFINITY = "0-15"
```

```
LD_LIBRARY_PATH =
```

```
"/home/cpu2017/amd_speed_aocc300_milan_B_lib/lib;/home/cpu2017/amd_speed  
_aocc300_milan_B_lib/lib32:"
```

```
MALLOC_CONF = "retain:true"
```

```
OMP_DYNAMIC = "false"
```

```
OMP_SCHEDULE = "static"
```

```
OMP_STACKSIZE = "16G"
```

```
OMP_THREAD_LIMIT = "16"
```

Environment variables set by runcpu during the 600.perlbench_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 602.gcc_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 605.mcf_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 620.omnetpp_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 623.xalancbmk_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 625.x264_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 631.deepsjeng_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 641.leela_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 648.exchange2_s peak run:

```
GOMP_CPU_AFFINITY = "0"
```

Environment variables set by runcpu during the 657.xz_s peak run:

```
GOMP_CPU_AFFINITY = "0-15"
```



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Dec-2021

Hardware Availability: Jun-2021

Software Availability: Jun-2021

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using opensUSE 15.2

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.

jemalloc: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)

jemalloc 5.1.0 is available here:

<https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2>

Platform Notes

SMT Mode set to Disabled

NUMA nodes per socket set to NPS1

ACPI SRAT L3 Cache As NUMA Domain set to Enabled

DRAM Scrub Time set to Disabled

Determinism Slider set to Power

L1 Stream HW Prefetcher set to Enabled

APBDIS set to 1

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d

running on localhost Sun Dec 12 10:05:08 2021

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 : AMD EPYC 7313P 16-Core Processor

1 "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 : 16

siblings : 16

physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu from util-linux 2.36.2:

Architecture: x86_64

CPU op-mode(s): 32-bit, 64-bit

Byte Order: Little Endian

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Platform Notes (Continued)

```

Address sizes:                48 bits physical, 48 bits virtual
CPU(s):                       16
On-line CPU(s) list:         0-15
Thread(s) per core:          1
Core(s) per socket:          16
Socket(s):                    1
NUMA node(s):                 4
Vendor ID:                    AuthenticAMD
CPU family:                   25
Model:                        1
Model name:                   AMD EPYC 7313P 16-Core Processor
Stepping:                     1
Frequency boost:              enabled
CPU MHz:                      2183.217
CPU max MHz:                  3000.0000
CPU min MHz:                  1500.0000
BogoMIPS:                    5988.64
Virtualization:              AMD-V
L1d cache:                   512 KiB
L1i cache:                   512 KiB
L2 cache:                     8 MiB
L3 cache:                    128 MiB
NUMA node0 CPU(s):           0-3
NUMA node1 CPU(s):           4-7
NUMA node2 CPU(s):           8-11
NUMA node3 CPU(s):           12-15
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:          Not affected
Vulnerability Mds:           Not affected
Vulnerability Meltdown:      Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1:     Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:     Mitigation; Full AMD retpoline, IBPB conditional, IBRS_FW, STIBP disabled, RSB filling
Vulnerability Srbds:          Not affected
Vulnerability Tsx async abort: Not affected
Flags:                        fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt aes xsave avx fl6c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hwpstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Platform Notes (Continued)

cqm_mbm_total cqm_mbm_local clzero irperf xsaveerptr wbnoinvd amd_ppin arat npt lbrv
svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
pfthreshold v_vmsave_vmload vgif umip pku ospke vaes vpclmulqdq rdpid overflow_recov
succor smca

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	32K	512K	8	Data	1	64	1	64
L1i	32K	512K	8	Instruction	1	64	1	64
L2	512K	8M	8	Unified	2	1024	1	64
L3	32M	128M	16	Unified	3	32768	1	64

/proc/cpuinfo cache data
cache size : 512 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
node 0 size: 257862 MB
node 0 free: 257593 MB
node 1 cpus: 4 5 6 7
node 1 size: 258046 MB
node 1 free: 257811 MB
node 2 cpus: 8 9 10 11
node 2 size: 258012 MB
node 2 free: 257742 MB
node 3 cpus: 12 13 14 15
node 3 size: 245935 MB
node 3 free: 245694 MB

node distances:

```
node  0  1  2  3
 0:  10  11  11  11
 1:  11  10  11  11
 2:  11  11  10  11
 3:  11  11  11  10
```

From /proc/meminfo

MemTotal: 1044333900 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
performance

From /etc/*release* /etc/*version*
os-release:

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Platform Notes (Continued)

```

NAME="SLES"
VERSION="15-SP3"
VERSION_ID="15.3"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP3"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp3"

```

```

uname -a:
Linux localhost 5.3.18-57-default #1 SMP Wed Apr 28 10:54:41 UTC 2021 (ba3c2e9) x86_64
x86_64 x86_64 GNU/Linux

```

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):	Not affected
CVE-2018-3620 (L1 Terminal Fault):	Not affected
Microarchitectural Data Sampling:	Not affected
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: usercopy/swaps barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):	Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):	Not affected
CVE-2019-11135 (TSX Asynchronous Abort):	Not affected

run-level 3 Dec 12 03:50

```

SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p3 xfs   1.5T   20G  1.5T   2% /

```

```

From /sys/devices/virtual/dmi/id
Vendor:          Cisco Systems Inc
Product:         UCSC-C225-M6N
Serial:         WZP25230TMY

```

Additional information from dmidecode 3.2 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.

Memory:

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Dec-2021

Hardware Availability: Jun-2021

Software Availability: Jun-2021

Platform Notes (Continued)

8x 0xCE00 M386AAG40AM3-CWE 128 GB 4 rank 3200

BIOS:

BIOS Vendor: Cisco Systems, Inc.
 BIOS Version: C225M6.4.2.1c.0.0806211349
 BIOS Date: 08/06/2021
 BIOS Revision: 5.22

(End of data from sysinfo program)

Compiler Version Notes

```
=====
C      | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base,
      | peak) 625.x264_s(base, peak) 657.xz_s(base, peak)
=====
```

```
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
=====
```

```
=====
C++   | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)
      | 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
=====
```

```
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
=====
```

```
=====
Fortran | 648.exchange2_s(base, peak)
=====
```

```
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
=====
```




SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Dec-2021

Hardware Availability: Jun-2021

Software Availability: Jun-2021

Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Base Portability Flags

```
600.perlbench_s: -DSPEC_LINUX_X64 -DSPEC_LP64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LINUX -DSPEC_LP64
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64
```

Base Optimization Flags

C benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lflang -lflangrti
```

C++ benchmarks:

```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Dec-2021

Hardware Availability: Jun-2021

Software Availability: Jun-2021

Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch
-mllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -extra-vectorizer-passes -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -convert-pow-exp-to-int=false
-z muldefs -mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti
```

Fortran benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti
```

Base Other Flags

C benchmarks:

-Wno-unused-command-line-argument -Wno-return-type

C++ benchmarks:

-Wno-unused-command-line-argument -Wno-return-type

Fortran benchmarks:

-Wno-return-type

Peak Compiler Invocation

C benchmarks:

clang

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Peak Compiler Invocation (Continued)

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true -mllvm -function-specialize
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lflang
```

C++ benchmarks:

```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -finline-aggressive
-mllvm -unroll-threshold=100 -flv-function-specialization
-mllvm -enable-licm-vrp -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch -mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
```

Fortran benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Cisco Systems

SPECspeed®2017_int_base = 12.5

Cisco UCS C225 M6 (AMD EPYC 7313P 16-Core)

SPECspeed®2017_int_peak = 12.5

CPU2017 License: 9019

Test Date: Dec-2021

Test Sponsor: Cisco Systems

Hardware Availability: Jun-2021

Tested by: Cisco Systems

Software Availability: Jun-2021

Peak Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-Wl,-mllvm -Wl,-function-specialize  
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3  
-fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-aggressive  
-mllvm -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -fopenmp=libomp  
-lomp -lamdlibm -ljemalloc -lflang
```

Peak Other Flags

C benchmarks:

```
-Wno-unused-command-line-argument -Wno-return-type
```

C++ benchmarks:

```
-Wno-unused-command-line-argument -Wno-return-type
```

Fortran benchmarks:

```
-Wno-return-type
```

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

<http://www.spec.org/cpu2017/flags/aocc300-flags-B2.html>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-v2-revC.html>

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

<http://www.spec.org/cpu2017/flags/aocc300-flags-B2.xml>

<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-AMD-v2-revC.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-12-12 13:05:07-0500.

Report generated on 2022-01-05 13:33:31 by CPU2017 PDF formatter v6442.

Originally published on 2022-01-04.