



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

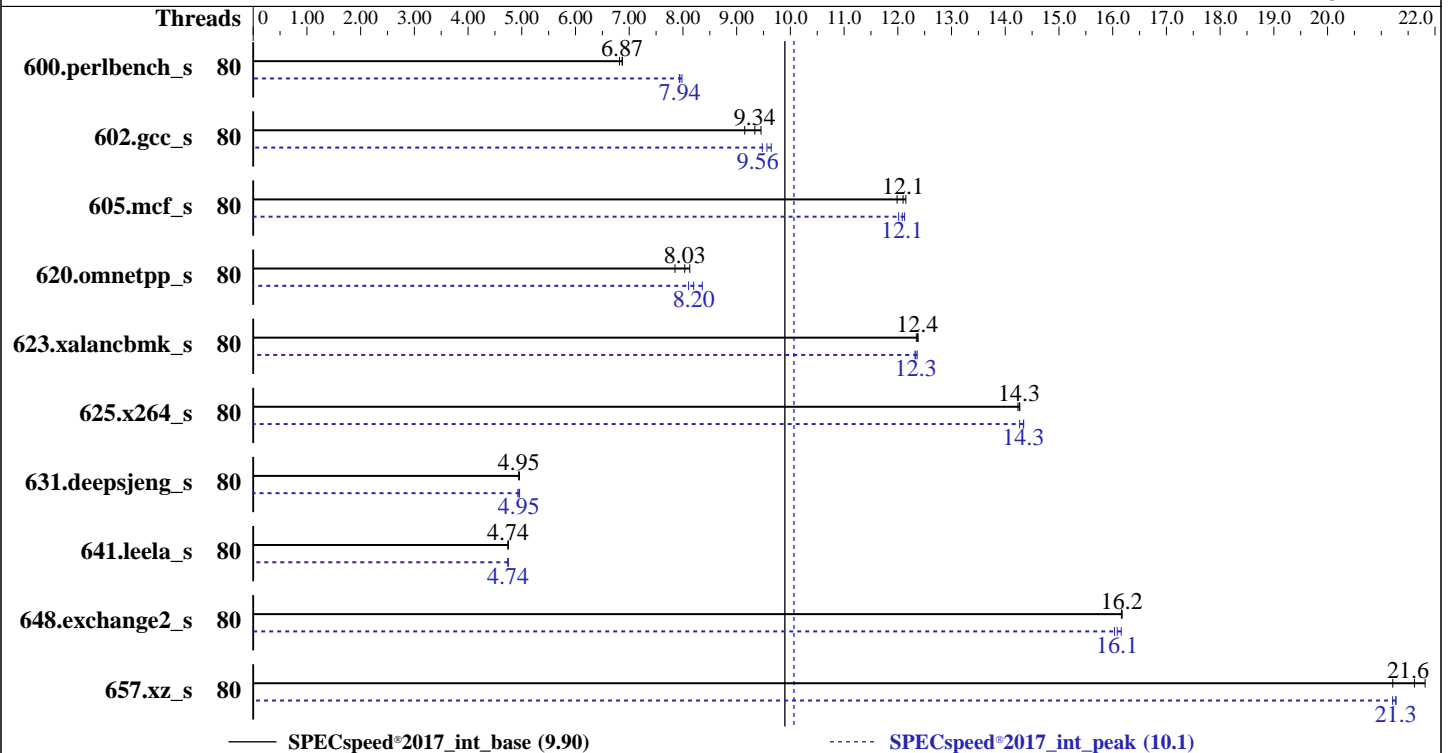
Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019



Hardware

CPU Name: Intel Xeon Gold 6248
 Max MHz: 3900
 Nominal: 2500
 Enabled: 40 cores, 2 chips, 2 threads/core
 Orderable: 1, 2 (chip)s
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 27.5 MB I+D on chip per chip
 Other: None
 Memory: 256 GB (8 x 32 GB 2Rx4 PC4-2933P-R)
 Storage: 1 x 480 GB SSD
 Other: None

Software

OS: CentOS Linux release 7.7.1908 (Core)
 3.10.0-1062.el7.x86_64
 Compiler: C/C++: Version 19.0.4.243 of Intel C/C++
 Compiler Build 20190416 for Linux;
 Fortran: Version 19.0.4.243 of Intel Fortran
 Compiler Build 20190416 for Linux
 Parallel: Yes
 Firmware: Version 3.0c released Apr-2019
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: Default



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	80	260	6.82	258	6.87	258	6.87	80	222	7.98	223	7.94	224	7.93
602.gcc_s	80	421	9.45	426	9.34	435	9.15	80	416	9.56	413	9.64	420	9.48
605.mcf_s	80	389	12.1	394	12.0	390	12.1	80	389	12.1	391	12.1	393	12.0
620.omnetpp_s	80	201	8.13	208	7.85	203	8.03	80	195	8.36	201	8.10	199	8.20
623.xalancbmk_s	80	115	12.4	114	12.4	115	12.3	80	115	12.4	115	12.3	115	12.3
625.x264_s	80	124	14.2	124	14.3	124	14.3	80	123	14.3	123	14.3	124	14.3
631.deepsjeng_s	80	290	4.95	289	4.95	290	4.95	80	290	4.95	291	4.93	289	4.96
641.leela_s	80	360	4.74	360	4.74	359	4.75	80	360	4.74	359	4.75	360	4.74
648.exchange2_s	80	182	16.2	182	16.2	182	16.2	80	183	16.1	182	16.2	183	16.0
657.xz_s	80	283	21.8	286	21.6	291	21.2	80	291	21.3	291	21.3	291	21.2

SPECspeed®2017_int_base = **9.90**

SPECspeed®2017_int_peak = **10.1**

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

Compiler Notes

SPEC has learned that this result, which used an evaluation compiler, was submitted contrary to the compiler license terms.

Intel has granted a one-time waiver for this result.

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,scatter"

LD_LIBRARY_PATH =

"/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"

OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 1x Intel Core i9-7900X 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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

General Notes (Continued)

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, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011
running on NODE4 Sun Nov 17 00:25:24 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 6248 CPU @ 2.50GHz

2 "physical id"s (chips)

80 "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 : 20

siblings : 40

physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

From lscpu:

Architecture: x86_64

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

Byte Order: Little Endian

CPU(s): 80

On-line CPU(s) list: 0-79

Thread(s) per core: 2

Core(s) per socket: 20

Socket(s): 2

NUMA node(s): 2

Vendor ID: GenuineIntel

CPU family: 6

Model: 85

Model name: Intel(R) Xeon(R) Gold 6248 CPU @ 2.50GHz

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Platform Notes (Continued)

```
Stepping: 7
CPU MHz: 999.908
CPU max MHz: 3900.0000
CPU min MHz: 1000.0000
BogoMIPS: 5000.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 28160K
NUMA node0 CPU(s): 0-19,40-59
NUMA node1 CPU(s): 20-39,60-79
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge 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
aperfperf eagerfpu 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 epb cat_l3 cdp_l3 intel_ppin
intel_pt ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept
vpid fsgsbase tsc_adjust bml hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a
avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd avx512bw avx512vl xsaveopt
xsavec xgetbv1 cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln
pts pku ospke avx512_vnni md_clear spec_ctrl intel_stibp flush_l1d arch_capabilities
```

```
/proc/cpuinfo cache data
cache size : 28160 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 16 17 18 19 40 41 42 43 44 45 46 47
48 49 50 51 52 53 54 55 56 57 58 59
node 0 size: 130724 MB
node 0 free: 100158 MB
node 1 cpus: 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 60 61 62 63 64
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79
node 1 size: 131072 MB
node 1 free: 103105 MB
node distances:
node 0 1
0: 10 21
1: 21 10
```

```
From /proc/meminfo
MemTotal: 263777716 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems
(Test Sponsor: Netweb Pte Ltd)
DS400TOG-424RT2
(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042
Test Sponsor: Netweb Pte Ltd
Tested by: Netweb

Test Date: Nov-2019
Hardware Availability: Sep-2019
Software Availability: Aug-2019

Platform Notes (Continued)

```

From /etc/*release* /etc/*version*
centos-release: CentOS Linux release 7.7.1908 (Core)
centos-release-upstream: Derived from Red Hat Enterprise Linux 7.7 (Source)
os-release:
  NAME="CentOS Linux"
  VERSION="7 (Core)"
  ID="centos"
  ID_LIKE="rhel fedora"
  VERSION_ID="7"
  PRETTY_NAME="CentOS Linux 7 (Core)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:centos:centos:7"
redhat-release: CentOS Linux release 7.7.1908 (Core)
system-release: CentOS Linux release 7.7.1908 (Core)
system-release-cpe: cpe:/o:centos:centos:7

uname -a:
Linux NODE4 3.10.0-1062.el7.x86_64 #1 SMP Wed Aug 7 18:08:02 UTC 2019 x86_64 x86_64
x86_64 GNU/Linux

Kernel self-reported vulnerability status:

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: Load fences, __user pointer
                                              sanitization
CVE-2017-5715 (Spectre variant 2):         Mitigation: Full retpoline, IBPB

run-level 3 Nov 15 07:02

SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/centos-home xfs   392G  206G  187G  53% /home

From /sys/devices/virtual/dmi/id
BIOS:           American Megatrends Inc. 3.0c 04/09/2019
Vendor:         Tyrone Systems
Product:        DS400TOG-424RT2
Serial:         A309085X9905828

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

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Platform Notes (Continued)

frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

16x NO DIMM NO DIMM

8x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

(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)
=====

```

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.4.243 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

icc: NOTE: The evaluation period for this product ends on 2-nov-2019 UTC.

```

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

```

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.4.243 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

icpc: NOTE: The evaluation period for this product ends on 2-nov-2019 UTC.

```

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

```

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.4.243 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

ifort: NOTE: The evaluation period for this product ends on 2-nov-2019 UTC.

Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Base Compiler Invocation (Continued)

Fortran benchmarks:

```
ifort -m64
```

Base Portability Flags

```
600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
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:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

C++ benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.243/linux/compiler/lib/intel64
-lqkmalloc
```

Fortran benchmarks:

```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs
```

Peak Compiler Invocation

C benchmarks:

```
icc -m64 -std=c11
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Peak Compiler Invocation (Continued)

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-mem-layout-trans=4 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-mem-layout-trans=4 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
605.mcf_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
625.x264_s: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

```
657.xz_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-mem-layout-trans=4 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc
```

C++ benchmarks:

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Tyrone Systems

(Test Sponsor: Netweb Pte Ltd)

DS400TOG-424RT2

(2.50 GHz, Intel Xeon Gold 6248)

SPECspeed®2017_int_base = 9.90

SPECspeed®2017_int_peak = 10.1

CPU2017 License: 006042

Test Sponsor: Netweb Pte Ltd

Tested by: Netweb

Test Date: Nov-2019

Hardware Availability: Sep-2019

Software Availability: Aug-2019

Peak Optimization Flags (Continued)

620.omnetpp_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo

-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4

-DSPEC_SUPPRESS_OPENMP

-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.243/linux/compiler/lib/intel64

-lqkmalloc

623.xalancbmk_s: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div

-qopt-mem-layout-trans=4

-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.243/linux/compiler/lib/intel64

-lqkmalloc

631.deepsjeng_s: Same as 623.xalancbmk_s

641.leela_s: Same as 623.xalancbmk_s

Fortran benchmarks:

-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-mem-layout-trans=4

-nostandard-realloc-lhs

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-15.html>

<http://www.spec.org/cpu2017/flags/Default-Platform-Flags.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-15.xml>

<http://www.spec.org/cpu2017/flags/Default-Platform-Flags.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 v1.1.0 on 2019-11-17 00:25:23-0500.

Report generated on 2020-10-29 15:44:56 by CPU2017 PDF formatter v6255.

Originally published on 2019-12-10.