SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Uniwide

(Test Sponsor: Telecommunications Technology Association)

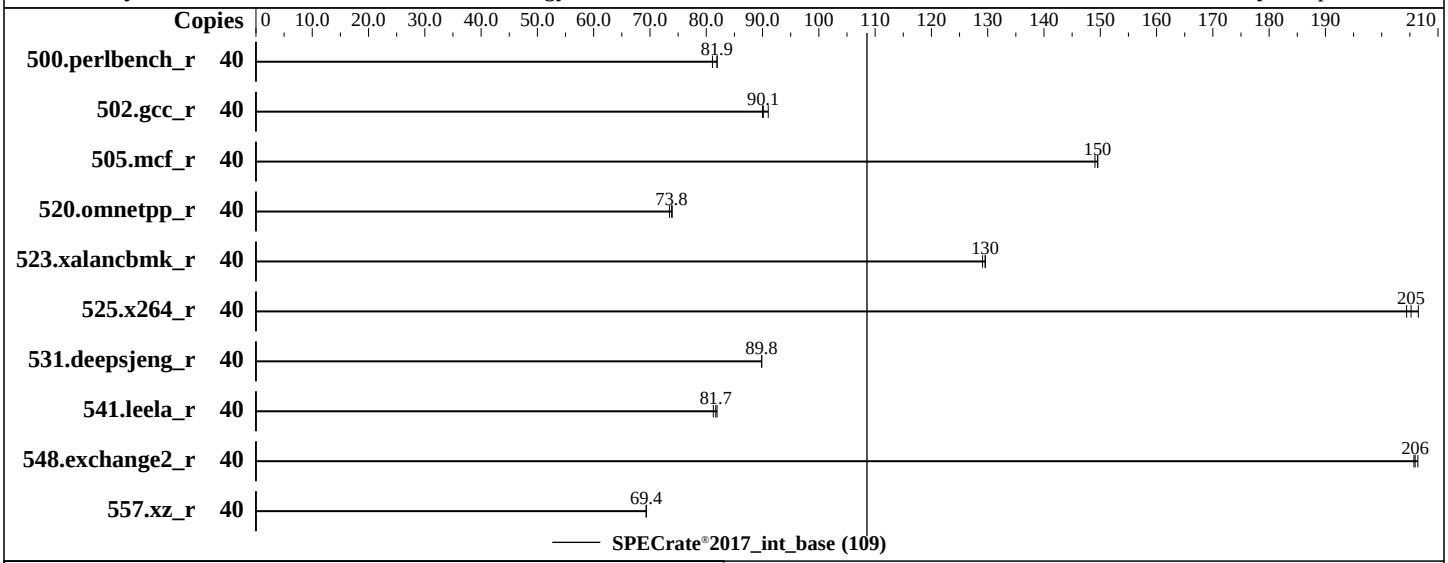
Uniwide RC124
(2.20 GHz, Intel Xeon Silver 4210)

SPECrate®2017_int_base = 109

SPECrate®2017_int_peak = Not Run

CPU2017 License: 83
Test Sponsor: Telecommunications Technology Association
Tested by: Telecommunications Technology Association

Test Date: Apr-2021
Hardware Availability: Sep-2020
Software Availability: Apr-2021



Hardware

CPU Name:	Intel Xeon Silver 4210
Max MHz:	3200
Nominal:	2200
Enabled:	20 cores, 2 chips, 2 threads/core
Orderable:	2 chip
Cache L1:	32 KB I + 32 KB D on chip per core
L2:	1 MB I+D on chip per core
L3:	13.75 MB I+D on chip per chip
Other:	None
Memory:	768 GB (24 x 32 GB 2Rx4 PC4-2666V-R, running at 2400)
Storage:	1 X 2475 GB SATA SSD
Other:	None

Software

OS:	CentOS Linux release 7.9.2009 (Core) 3.10.0-1160.el7.x86_64
Compiler:	C/C++: Version 19.0.4.243 of Intel C/C++ Compiler for Linux; Fortran: Version 19.0.4.243 of Intel Fortran Compiler for Linux
Parallel:	No
Firmware:	Version RS700-E9-RS4 released Sep-2020
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	None
Power Management:	BIOS set to prefer performance at the cost of additional power usage

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Uniwide
(Test Sponsor: Telecommunications Technology Association)
Uniwide RC124
(2.20 GHz, Intel Xeon Silver 4210)

SPECrate®2017_int_base = 109

SPECrate®2017_int_peak = Not Run

CPU2017 License: 83
Test Sponsor: Telecommunications Technology Association
Tested by: Telecommunications Technology Association

Test Date: Apr-2021
Hardware Availability: Sep-2020
Software Availability: Apr-2021

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	40	**777**	**81.9**	777	81.9	785	81.1							
502.gcc_r	40	**628**	**90.1**	622	91.0	629	90.0							
505.mcf_r	40	432	150	434	149	**432**	**150**							
520.omnetpp_r	40	710	74.0	**711**	**73.8**	714	73.5							
523.xalancbmk_r	40	327	129	**326**	**130**	326	130							
525.x264_r	40	339	207	343	204	**341**	**205**							
531.deepsjeng_r	40	510	89.8	**510**	**89.8**	510	89.9							
541.leela_r	40	809	81.9	**811**	**81.7**	815	81.3							
548.exchange2_r	40	509	206	**509**	**206**	508	206							
557.xz_r	40	**623**	**69.4**	623	69.3	623	69.4							

SPECrate®2017_int_base = 109

SPECrate®2017_int_peak = Not Run

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

Submit Notes

```
The config file option 'submit' was used.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
      "/home/spec/speccpu/cpu2017-1.1.0/ia32:/home/spec/speccpu/cpu2017-1.1.0/
      intel64:/home/spec/speccpu/cpu2017-1.1.0/je5.0.1-32:/home/spec/speccpu/c
      pu2017-1.1.0/je5.0.1-64"
```

General Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/spec/speccpu/cpu2017-1.1.0/ia32
:/home/spec/speccpu/cpu2017-1.1.0/intel64
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.
Intel VT for Directed I/O(VT-d) -> Disabled
Core Optimizer -> Engine Boost Options -> Level3(Max)
LLC dead line alloc -> Disabled
SR-IOV Support -> Disabled
```

(Continued on next page)

General Notes (Continued)

```
CSM Support -> Disabled
```

Platform Notes

```
 Sysinfo program /home/spec/speccpu/cpu2017-1.1.0/bin/sysinfo
 Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
 running on localhost.localdomain Wed Apr 28 02:43:42 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 : Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz
       2  "physical id"s (chips)
       40 "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 : 10
       siblings  : 20
       physical 0: cores 0 1 2 3 4 8 9 10 11 12
       physical 1: cores 0 1 2 3 4 8 9 10 11 12

 From lscpu:
      Architecture:          x86_64
      CPU op-mode(s):        32-bit, 64-bit
      Byte Order:            Little Endian
      CPU(s):                40
      On-line CPU(s) list:   0-39
      Thread(s) per core:    2
      Core(s) per socket:    10
      Socket(s):             2
      NUMA node(s):          2
      Vendor ID:             GenuineIntel
      CPU family:            6
      Model:                 85
      Model name:            Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz
      Stepping:              7
      CPU MHz:               2660.974
      CPU max MHz:           3200.0000
      CPU min MHz:           1000.0000
      BogoMIPS:              4400.00
      Virtualization:        VT-x
      L1d cache:             32K
      L1i cache:             32K
```

(Continued on next page)

Platform Notes (Continued)

```
      L2 cache:              1024K
      L3 cache:              14080K
      NUMA node0 CPU(s):     0-9,20-29
      NUMA node1 CPU(s):     10-19,30-39
      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
      aperfmperf 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 invpcid_single
      intel_ppin intel_pt ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
      flexpriority ept vpid fsgsbase tsc_adjust bmi1 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 hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke avx512_vnni
      md_clear spec_ctrl intel_stibp flush_l1d arch_capabilities

  /proc/cpuinfo cache data
     cache size : 14080 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 20 21 22 23 24 25 26 27 28 29
    node 0 size: 385380 MB
    node 0 free: 374102 MB
    node 1 cpus: 10 11 12 13 14 15 16 17 18 19 30 31 32 33 34 35 36 37 38 39
    node 1 size: 387051 MB
    node 1 free: 375955 MB
    node distances:
    node   0   1
      0:  10  21
      1:  21  10

  From /proc/meminfo
     MemTotal:       790970736 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  From /etc/*release* /etc/*version*
     centos-release: CentOS Linux release 7.9.2009 (Core)
     centos-release-upstream: Derived from Red Hat Enterprise Linux 7.8 (Source)
     os-release:
        NAME="CentOS Linux"
        VERSION="7 (Core)"
        ID="centos"
        ID_LIKE="rhel fedora"
```

(Continued on next page)

Platform Notes (Continued)

```
       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 7.9.2009 (Core)
    system-release: CentOS Linux release 7.9.2009 (Core)
    system-release-cpe: cpe:/o:centos:centos:7

  uname -a:
     Linux localhost.localdomain 3.10.0-1160.el7.x86_64 #1 SMP Mon Oct 19 16:18:59 UTC 2020
     x86_64 x86_64 x86_64 GNU/Linux

  Kernel self-reported vulnerability status:

  itlb_multihit:                          No status reported
  CVE-2018-3620 (L1 Terminal Fault):      No status reported
  Microarchitectural Data Sampling:       No status reported
  CVE-2017-5754 (Meltdown):               No status reported
  CVE-2018-3639 (Speculative Store Bypass): No status reported
  CVE-2017-5753 (Spectre variant 1):      No status reported
  CVE-2017-5715 (Spectre variant 2):      No status reported
  srbds:                                  No status reported
  tsx_async_abort:                        No status reported

  run-level 3 2021-04-28 02:41

  SPEC is set to: /home/spec/speccpu/cpu2017-1.1.0
     Filesystem              Type  Size  Used Avail Use% Mounted on
     /dev/mapper/centos-home xfs   838G   25G  814G   3% /home

  From /sys/devices/virtual/dmi/id
      BIOS:    American Megatrends Inc. 6602 09/02/2020
      Vendor:  ASUSTeK COMPUTER INC.
      Product: RS700-E9-RS4

  Cannot run dmidecode; consider saying (as root)
     chmod +s /usr/sbin/dmidecode

  (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base)
        | 525.x264_r(base) 557.xz_r(base)
------------------------------------------------------------------------------
```

(Continued on next page)

Compiler Version Notes (Continued)

```
icc (ICC) 19.0.4.243 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
        | 541.leela_r(base)
------------------------------------------------------------------------------
icpc (ICC) 19.0.4.243 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------

==============================================================================
Fortran | 548.exchange2_r(base)
------------------------------------------------------------------------------
ifort (IFORT) 19.0.4.243 20190416
Copyright (C) 1985-2019 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icc -m64 -std=c11`

C++ benchmarks:
`icpc -m64`

Fortran benchmarks:
`ifort -m64`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -L/opt/intel/lib/intel64 -lqkmalloc
```

C++ benchmarks:
```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -L/opt/intel/lib/intel64 -lqkmalloc
```

Fortran benchmarks:
```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-L/opt/intel/lib/intel64 -lqkmalloc
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/UNIWIDE_Technologies_Inc.-Platform-Flags-Version-SVR-RC1.html
http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2021-05-25.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/UNIWIDE_Technologies_Inc.-Platform-Flags-Version-SVR-RC1.xml
http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2021-05-25.xml

SPEC CPU and SPECrate 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 2021-04-28 02:43:42-0400.
Report generated on 2021-05-25 16:47:46 by CPU2017 PS formatter v6442.
Originally published on 2021-05-25.