



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

CPU2017 License: 55

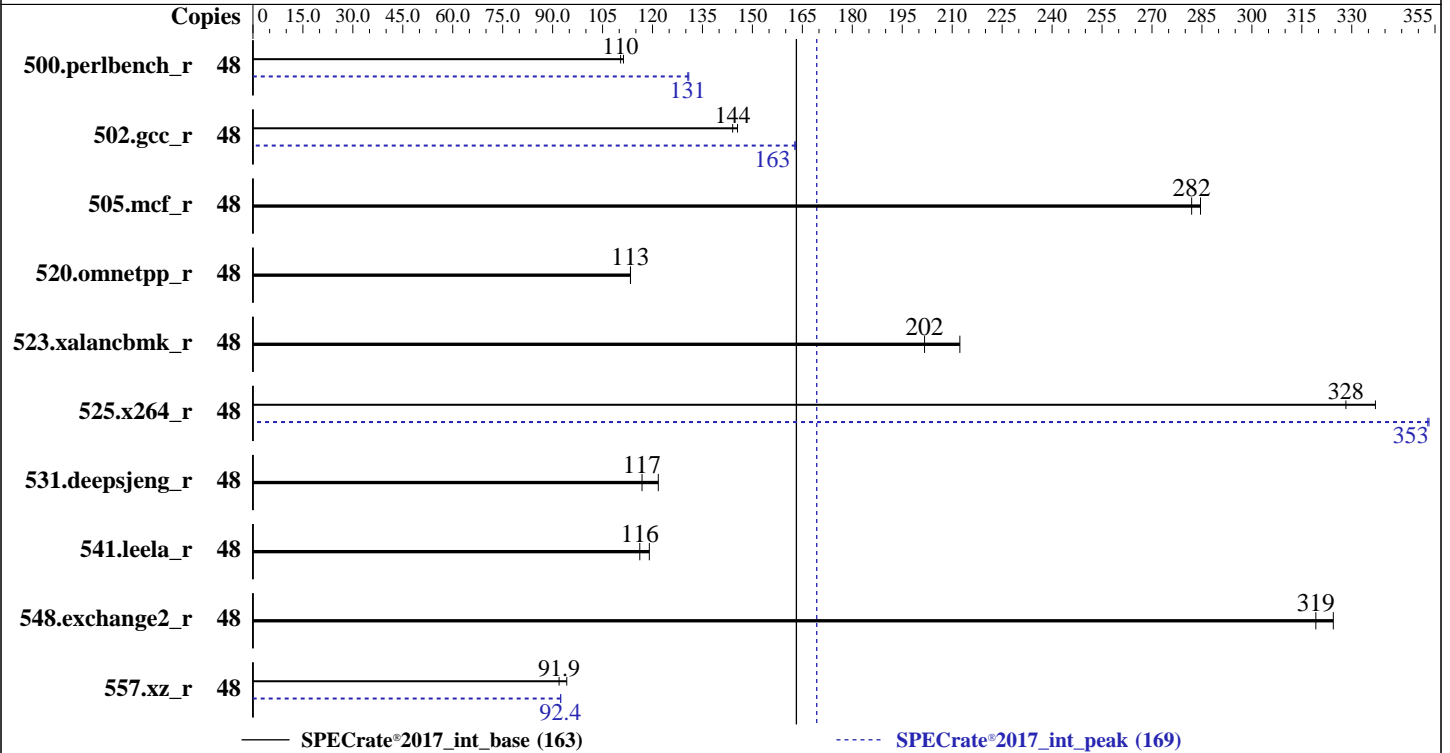
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2021

Hardware Availability: May-2021

Software Availability: Feb-2021



### Hardware

CPU Name: Intel Xeon Silver 4310  
 Max MHz: 3300  
 Nominal: 2100  
 Enabled: 24 cores, 2 chips, 2 threads/core  
 Orderable: 1,2 chips  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 1.25 MB I+D on chip per core  
 L3: 18 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R, running at 2666)  
 Storage: 225 GB on tmpfs  
 Other: None

### Software

OS: Red Hat Enterprise Linux 8.3 (Ootpa)  
 4.18.0-240.15.1.el8\_3.x86\_64  
 Compiler: C/C++: Version 2021.1 of Intel oneAPI DPC++/C++  
 Compiler Build 20201113 for Linux;  
 Fortran: Version 2021.1 of Intel Fortran Compiler  
 Classic Build 20201112 for Linux;  
 C/C++: Version 2021.1 of Intel C/C++ Compiler  
 Classic Build 20201112 for Linux  
 Parallel: No  
 Firmware: Version 1.2.1 released May-2021  
 File System: tmpfs  
 System State: Run level 5 (graphical multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other: jemalloc memory allocator V5.0.1  
 Power Management: BIOS and OS set to prefer performance  
 at the cost of additional power usage.



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Tested by: Dell Inc.

Test Date: May-2021  
Hardware Availability: May-2021  
Software Availability: Feb-2021

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	48	687	111	<b>692</b>	<b>110</b>			48	584	131	<b>585</b>	<b>131</b>		
502.gcc_r	48	467	146	<b>472</b>	<b>144</b>			48	417	163	<b>418</b>	<b>163</b>		
505.mcf_r	48	273	285	<b>275</b>	<b>282</b>			48	273	285	<b>275</b>	<b>282</b>		
520.omnetpp_r	48	555	113	<b>556</b>	<b>113</b>			48	555	113	<b>556</b>	<b>113</b>		
523.xalancbmk_r	48	<b>251</b>	<b>202</b>	239	212			48	<b>251</b>	<b>202</b>	239	212		
525.x264_r	48	<b>256</b>	<b>328</b>	249	337			48	238	353	<b>238</b>	<b>353</b>		
531.deepsjeng_r	48	<b>471</b>	<b>117</b>	452	122			48	<b>471</b>	<b>117</b>	452	122		
541.leela_r	48	<b>684</b>	<b>116</b>	668	119			48	<b>684</b>	<b>116</b>	668	119		
548.exchange2_r	48	<b>394</b>	<b>319</b>	388	324			48	<b>394</b>	<b>319</b>	388	324		
557.xz_r	48	<b>564</b>	<b>91.9</b>	550	94.2			48	561	92.4	<b>561</b>	<b>92.4</b>		

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## 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:  
LD\_LIBRARY\_PATH =  
"/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/lib/ia32:/mnt/ramdisk/cpu2017-1.1.5-ic2021.1/je5.0.1-32"  
MALLOC\_CONF = "retain:true"

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Red Hat Enterprise Linux 8.1  
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  
runcpu command invoked through numactl i.e.:

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

## General Notes (Continued)

numactl --interleave=all runcpu <etc>  
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>

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.

Benchmark run from a 225 GB ramdisk created with the cmd: "mount -t tmpfs -o size=225G tmpfs /mnt/ramdisk"

## Platform Notes

BIOS Settings:

Sub NUMA Cluster : 2-Way Clustering

Virtualization Technology : Disabled

System Profile : Custom

CPU Power Management : Maximum Performance

C1E : Disabled

C States : Autonomous

Memory Patrol Scrub : Disabled

Energy Efficiency Policy : Performance

CPU Interconnect Bus Link

Power Management : Disabled

sysinfo program /mnt/ramdisk/cpu2017-1.1.5-ic2021.1/bin/sysinfo

Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c

running on localhost.localdomain Fri May 14 17:07:24 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 4310 CPU @ 2.10GHz

2 "physical id"s (chips)

48 "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 : 12

siblings : 24

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

**Test Date:** May-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

### Platform Notes (Continued)

```
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11
```

From lscpu:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                48
On-line CPU(s) list:   0-47
Thread(s) per core:    2
Core(s) per socket:    12
Socket(s):             2
NUMA node(s):         4
Vendor ID:             GenuineIntel
CPU family:            6
Model:                106
Model name:            Intel(R) Xeon(R) Silver 4310 CPU @ 2.10GHz
Stepping:              6
CPU MHz:               2701.068
BogoMIPS:              4200.00
Virtualization:        VT-x
L1d cache:             48K
L1i cache:             32K
L2 cache:              1280K
L3 cache:              18432K
NUMA node0 CPU(s):    0,4,8,12,16,20,24,28,32,36,40,44
NUMA node1 CPU(s):    2,6,10,14,18,22,26,30,34,38,42,46
NUMA node2 CPU(s):    1,5,9,13,17,21,25,29,33,37,41,45
NUMA node3 CPU(s):    3,7,11,15,19,23,27,31,35,39,43,47
```

```
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 cpuid
aperfperf 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 invpcid_single
intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust bmi1 hle avx2
smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1
xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect wbnoinvd
dtherm ida arat pln pts avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d
arch_capabilities
```

```
/proc/cpuinfo cache data
cache size : 18432 KB
```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2021

Hardware Availability: May-2021

Software Availability: Feb-2021

## Platform Notes (Continued)

```

physical chip.
available: 4 nodes (0-3)
node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44
node 0 size: 126833 MB
node 0 free: 113110 MB
node 1 cpus: 2 6 10 14 18 22 26 30 34 38 42 46
node 1 size: 127602 MB
node 1 free: 128232 MB
node 2 cpus: 1 5 9 13 17 21 25 29 33 37 41 45
node 2 size: 127674 MB
node 2 free: 128640 MB
node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47
node 3 size: 127724 MB
node 3 free: 128116 MB
node distances:
node  0  1  2  3
  0:  10  11  20  20
  1:  11  10  20  20
  2:  20  20  10  11
  3:  20  20  11  10

```

```

From /proc/meminfo
MemTotal:          527680120 kB
HugePages_Total:      0
Hugepagesize:       2048 kB

```

```

/sbin/tuned-adm active
Current active profile: throughput-performance

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

```

```

uname -a:
Linux localhost.localdomain 4.18.0-240.15.1.el8_3.x86_64 #1 SMP Wed Feb 3 03:12:15 EST
2021 x86_64 x86_64 x86_64 GNU/Linux

```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2021

Hardware Availability: May-2021

Software Availability: Feb-2021

## Platform Notes (Continued)

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: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):	Not affected
CVE-2019-11135 (TSX Asynchronous Abort):	Not affected

run-level 5 May 14 16:51

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.5-ic2021.1

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
tmpfs	tmpfs	225G	6.9G	219G	4%	/mnt/ramdisk

```

From /sys/devices/virtual/dmi/id
Vendor:          Dell Inc.
Product:         PowerEdge R750xa
Product Family: PowerEdge
Serial:          1234567

```

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.

```

Memory:
13x 00AD00B300AD HMAA4GR7AJR8N-XN 32 GB 2 rank 3200, configured at 2666
3x 00AD063200AD HMAA4GR7AJR8N-XN 32 GB 2 rank 3200, configured at 2666
16x Not Specified Not Specified

```

```

BIOS:
BIOS Vendor:      Dell Inc.
BIOS Version:     1.2.1
BIOS Date:        05/06/2021
BIOS Revision:    1.2

```

(End of data from sysinfo program)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

## Compiler Version Notes

=====  
C | 500.perlbench\_r(peak) 557.xz\_r(peak)  
-----

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112\_000000  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
C | 502.gcc\_r(peak)  
-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
525.x264\_r(base, peak) 557.xz\_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
C | 500.perlbench\_r(peak) 557.xz\_r(peak)  
-----

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112\_000000  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
C | 502.gcc\_r(peak)  
-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----

=====  
C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
525.x264\_r(base, peak) 557.xz\_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

**Test Date:** May-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

## Compiler Version Notes (Continued)

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====  
C | 500.perlbench\_r(peak) 557.xz\_r(peak)  
=====

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====  
C | 502.gcc\_r(peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====  
C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(base)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base, peak)  
| 531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====  
Fortran | 548.exchange2\_r(base, peak)  
=====

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.





# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

## 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:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -mbranches-within-32B-boundaries
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

## Base Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmallocc
```

## Peak Compiler Invocation

C benchmarks (except as noted below):

icx

500.perlbench\_r: icc

557.xz\_r: icc

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

## Peak Portability Flags

```
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64  
502.gcc_r: -D_FILE_OFFSET_BITS=64  
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
```

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -wl, -z, muldefs -prof-gen(pass 1) -prof-use(pass 2)  
-xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -fno-strict-overflow  
-mbranches-within-32B-boundaries
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate®2017\_int\_base = 163

SPECrate®2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

## Peak Optimization Flags (Continued)

500.perlbench\_r (continued):

```
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmallo
```

502.gcc\_r: -m32

```
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/ia32_lin  
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)  
-fprofile-use=default.profddata(pass 2) -xCORE-AVX512 -flto  
-Ofast(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries  
-L/usr/local/jemalloc32-5.0.1/lib -ljemallo
```

505.mcf\_r: basepeak = yes

525.x264\_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto

```
-O3 -ffast-math -qopt-mem-layout-trans=4 -fno-alias  
-mbranches-within-32B-boundaries  
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmallo
```

557.xz\_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div

```
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries  
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin  
-lqkmallo
```

C++ benchmarks:

520.omnetpp\_r: basepeak = yes

523.xalancbmk\_r: basepeak = yes

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

548.exchange2\_r: basepeak = yes

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.html](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.html)

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.1.html>

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml)

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.1.xml>



# SPEC CPU<sup>®</sup>2017 Integer Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R750xa (Intel Xeon Silver 4310, 2.10 GHz)

SPECrate<sup>®</sup>2017\_int\_base = 163

SPECrate<sup>®</sup>2017\_int\_peak = 169

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** May-2021

**Hardware Availability:** May-2021

**Software Availability:** Feb-2021

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](mailto:info@spec.org).

Tested with SPEC CPU<sup>®</sup>2017 v1.1.5 on 2021-05-14 05:07:23-0400.

Report generated on 2021-07-08 13:30:59 by CPU2017 PDF formatter v6442.

Originally published on 2021-07-06.