



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

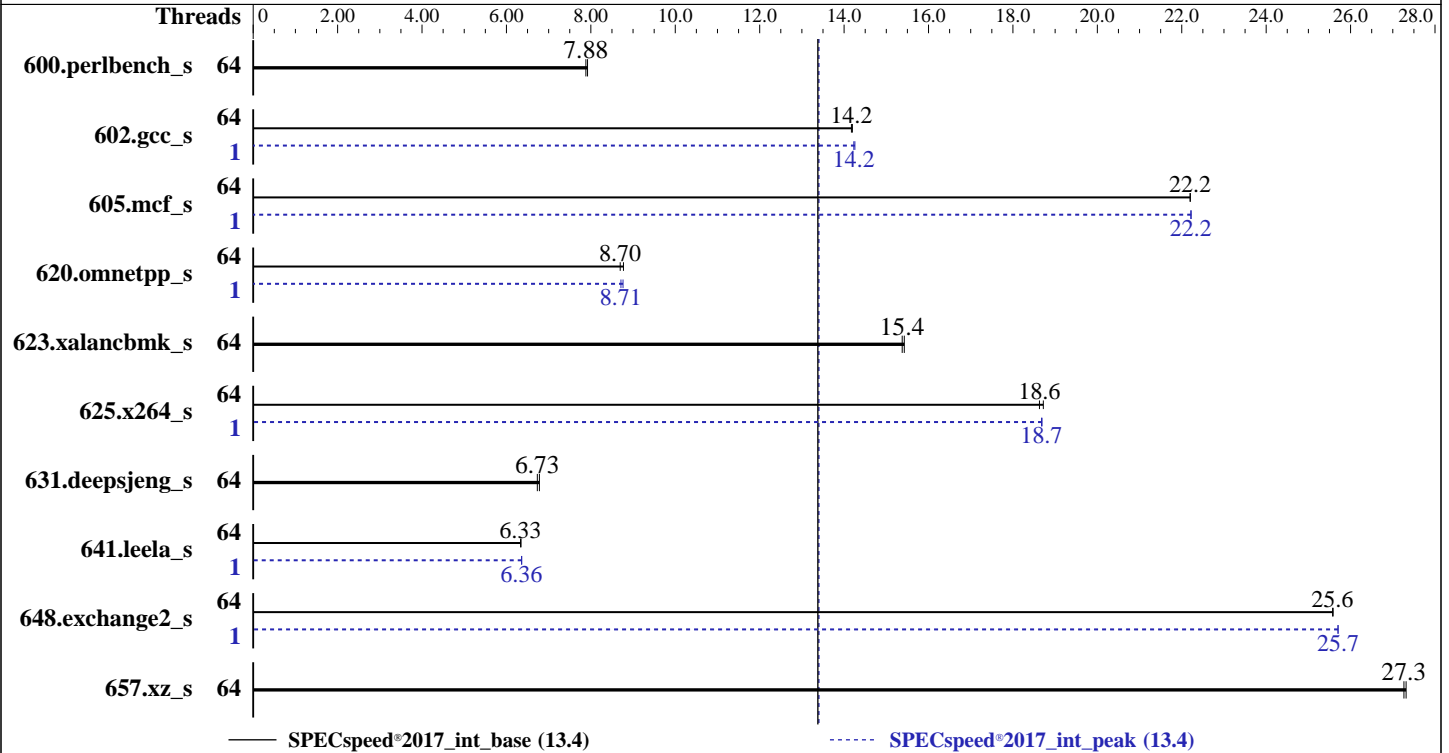
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021



### Hardware

CPU Name: AMD EPYC 75F3  
 Max MHz: 4000  
 Nominal: 2950  
 Enabled: 64 cores, 2 chips  
 Orderable: 1,2 chips  
 Cache L1: 32 KB I + 32 KB D on chip per core  
 L2: 512 KB I+D on chip per core  
 L3: 256 MB I+D on chip per chip, 32 MB shared / 4 cores  
 Other: None  
 Memory: 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)  
 Storage: 225 GB on tmpfs  
 Other: None

### Software

OS: Red Hat Enterprise Linux 8.3 (Ootpa)  
 4.18.0-240.10.1.el8\_3.x86\_64  
 Compiler: C/C++/Fortran: Version 3.0.0 of AOCC  
 Parallel: Yes  
 Firmware: Version 2.0.3 released Jan-2021  
 File System: tmpfs  
 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 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECSpeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECSpeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	224	7.92	<b><u>225</u></b>	<b><u>7.88</u></b>			64	224	7.92	<b><u>225</u></b>	<b><u>7.88</u></b>		
602.gcc_s	64	<b><u>281</u></b>	<b><u>14.2</u></b>	280	14.2			1	279	14.3	<b><u>280</u></b>	<b><u>14.2</u></b>		
605.mcf_s	64	213	22.2	<b><u>213</u></b>	<b><u>22.2</u></b>			1	<b><u>213</u></b>	<b><u>22.2</u></b>	212	22.2		
620.omnetpp_s	64	<b><u>188</u></b>	<b><u>8.70</u></b>	186	8.77			1	<b><u>187</u></b>	<b><u>8.71</u></b>	186	8.76		
623.xalancbmk_s	64	91.9	15.4	<b><u>92.2</u></b>	<b><u>15.4</u></b>			64	91.9	15.4	<b><u>92.2</u></b>	<b><u>15.4</u></b>		
625.x264_s	64	94.2	18.7	<b><u>94.7</u></b>	<b><u>18.6</u></b>			1	<b><u>94.4</u></b>	<b><u>18.7</u></b>	94.4	18.7		
631.deepsjeng_s	64	211	6.78	<b><u>213</u></b>	<b><u>6.73</u></b>			64	211	6.78	<b><u>213</u></b>	<b><u>6.73</u></b>		
641.leela_s	64	269	6.35	<b><u>269</u></b>	<b><u>6.33</u></b>			1	268	6.36	<b><u>268</u></b>	<b><u>6.36</u></b>		
648.exchange2_s	64	115	25.6	<b><u>115</u></b>	<b><u>25.6</u></b>			1	<b><u>114</u></b>	<b><u>25.7</u></b>	114	25.7		
657.xz_s	64	226	27.3	<b><u>227</u></b>	<b><u>27.3</u></b>			64	226	27.3	<b><u>227</u></b>	<b><u>27.3</u></b>		

SPECSpeed®2017\_int\_base = 13.4

SPECSpeed®2017\_int\_peak = 13.4

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  
'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>  
  
'echo 8 > /proc/sys/vm/dirty\_ratio' run as root to limit dirty cache to 8% of memory.  
'echo 1 > /proc/sys/vm/swappiness' run as root to limit swap usage to minimum necessary.  
'echo 1 > /proc/sys/vm/zone\_reclaim\_mode' run as root to free node-local memory and avoid remote memory usage.  
'sync; echo 3 > /proc/sys/vm/drop\_caches' run as root to reset filesystem caches.  
'sysctl -w kernel.randomize\_va\_space=0' run as root to disable address space layout randomization (ASLR) to reduce run-to-run variability.

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Operating System Notes (Continued)

To enable Transparent Hugepages (THP) for all allocations,  
'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 = "0-63"  
LD\_LIBRARY\_PATH =  
"/mnt/ramdisk/cpu2017-1.1.5/amd\_speed\_aocc300\_milan\_B\_lib/64;/mnt/ramdisk/cpu2017-1.1.5/amd\_speed\_aocc300\_milan\_B\_lib/32:"  
MALLOC\_CONF = "retain:true"  
OMP\_DYNAMIC = "false"  
OMP\_SCHEDULE = "static"  
OMP\_STACKSIZE = "128M"  
OMP\_THREAD\_LIMIT = "64"

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 625.x264\_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"

## 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)

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Date: Mar-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Mar-2021

## General Notes (Continued)

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

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

BIOS settings:

```

Logical processor      : Disabled
L3 Cache as NUMA Domain : Enabled
Virtualization Technology : Disabled
DRAM Refresh Delay    : Performance
System Profile         : Custom
  CPU Power Management : Maximum Performance
  Memory Patrol Scrub  : Disabled
  PCI ASPM L1 Link     :
  Power Management     : Disabled

```

Sysinfo program /mnt/ramdisk/cpu2017-1.1.5/bin/sysinfo

Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c

running on localhost.localdomain Tue Mar 9 15:00:43 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 75F3 32-Core Processor
 2 "physical id"s (chips)
 64 "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 : 32
siblings  : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31

```

From lscpu:

```

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 64

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Platform Notes (Continued)

```

On-line CPU(s) list: 0-63
Thread(s) per core: 1
Core(s) per socket: 32
Socket(s): 2
NUMA node(s): 16
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 75F3 32-Core Processor
Stepping: 1
CPU MHz: 2018.829
BogoMIPS: 5889.32
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 32768K
NUMA node0 CPU(s): 0-3
NUMA node1 CPU(s): 4-7
NUMA node2 CPU(s): 8-11
NUMA node3 CPU(s): 12-15
NUMA node4 CPU(s): 16-19
NUMA node5 CPU(s): 20-23
NUMA node6 CPU(s): 24-27
NUMA node7 CPU(s): 28-31
NUMA node8 CPU(s): 32-35
NUMA node9 CPU(s): 36-39
NUMA node10 CPU(s): 40-43
NUMA node11 CPU(s): 44-47
NUMA node12 CPU(s): 48-51
NUMA node13 CPU(s): 52-55
NUMA node14 CPU(s): 56-59
NUMA node15 CPU(s): 60-63
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 x2apic movbe popcnt aes xsave avx f16c
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 hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall
fsgsbase bmi1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb
sha_ni xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc 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

```

/proc/cpuinfo cache data

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Platform Notes (Continued)

cache size : 512 KB

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

```

available: 16 nodes (0-15)
node 0 cpus: 0 1 2 3
node 0 size: 128582 MB
node 0 free: 128520 MB
node 1 cpus: 4 5 6 7
node 1 size: 129016 MB
node 1 free: 128981 MB
node 2 cpus: 8 9 10 11
node 2 size: 129020 MB
node 2 free: 128783 MB
node 3 cpus: 12 13 14 15
node 3 size: 129020 MB
node 3 free: 128972 MB
node 4 cpus: 16 17 18 19
node 4 size: 128979 MB
node 4 free: 128934 MB
node 5 cpus: 20 21 22 23
node 5 size: 129020 MB
node 5 free: 128962 MB
node 6 cpus: 24 25 26 27
node 6 size: 129022 MB
node 6 free: 128982 MB
node 7 cpus: 28 29 30 31
node 7 size: 116908 MB
node 7 free: 116864 MB
node 8 cpus: 32 33 34 35
node 8 size: 129022 MB
node 8 free: 128906 MB
node 9 cpus: 36 37 38 39
node 9 size: 129020 MB
node 9 free: 128935 MB
node 10 cpus: 40 41 42 43
node 10 size: 129020 MB
node 10 free: 128927 MB
node 11 cpus: 44 45 46 47
node 11 size: 129018 MB
node 11 free: 128862 MB
node 12 cpus: 48 49 50 51
node 12 size: 129016 MB
node 12 free: 128833 MB
node 13 cpus: 52 53 54 55
node 13 size: 129020 MB
node 13 free: 128929 MB

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Platform Notes (Continued)

```

node 14 cpus: 56 57 58 59
node 14 size: 129012 MB
node 14 free: 123992 MB
node 15 cpus: 60 61 62 63
node 15 size: 129014 MB
node 15 free: 128971 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
 0:  10 11 11 11 11 11 11 11 32 32 32 32 32 32 32 32
 1:  11 10 11 11 11 11 11 11 32 32 32 32 32 32 32 32
 2:  11 11 10 11 11 11 11 11 32 32 32 32 32 32 32 32
 3:  11 11 11 10 11 11 11 11 32 32 32 32 32 32 32 32
 4:  11 11 11 11 10 11 11 11 32 32 32 32 32 32 32 32
 5:  11 11 11 11 11 10 11 11 32 32 32 32 32 32 32 32
 6:  11 11 11 11 11 11 10 11 32 32 32 32 32 32 32 32
 7:  11 11 11 11 11 11 11 10 32 32 32 32 32 32 32 32
 8:  32 32 32 32 32 32 32 32 10 11 11 11 11 11 11 11
 9:  32 32 32 32 32 32 32 32 11 10 11 11 11 11 11 11
10:  32 32 32 32 32 32 32 32 11 11 10 11 11 11 11 11
11:  32 32 32 32 32 32 32 32 11 11 11 10 11 11 11 11
12:  32 32 32 32 32 32 32 32 11 11 11 11 10 11 11 11
13:  32 32 32 32 32 32 32 32 11 11 11 11 11 10 11 11
14:  32 32 32 32 32 32 32 32 11 11 11 11 11 11 10 11
15:  32 32 32 32 32 32 32 32 11 11 11 11 11 11 11 10

```

```

From /proc/meminfo
MemTotal:      2101013436 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

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Platform Notes (Continued)

uname -a:

```
Linux localhost.localdomain 4.18.0-240.10.1.el8_3.x86_64 #1 SMP Wed Dec 16 03:30:52
EST 2020 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/swapgs 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 Mar 9 14:57 last=5

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.5

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
tmpfs	tmpfs	225G	4.8G	221G	3%	/mnt/ramdisk

From /sys/devices/virtual/dmi/id

Vendor:	Dell Inc.
Product:	PowerEdge R7525
Product Family:	PowerEdge
Serial:	48LN333

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:

16x 802C8632802C 72ASS16G72LZ-3G2B3	128 GB	4 rank	3200
16x Not Specified	Not Specified		

BIOS:

BIOS Vendor:	Dell Inc.
BIOS Version:	2.0.3
BIOS Date:	01/15/2021
BIOS Revision:	2.0

(Continued on next page)





# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

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

Test Date: Mar-2021  
Hardware Availability: Apr-2021  
Software Availability: Mar-2021

## Platform Notes (Continued)

(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  
-----
```

## Base Compiler Invocation

C benchmarks:  
clang

C++ benchmarks:  
clang++

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Dell Inc.**

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Mar-2021

**Hardware Availability:** Apr-2021

**Software Availability:** Mar-2021

## Base Compiler Invocation (Continued)

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
-freemap-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
-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

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-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
```

C++ benchmarks:

```
clang++
```

Fortran benchmarks:

```
flang
```



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

600.perlbench\_s: basepeak = yes

```
602.gcc_s: -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 -fltto
-fstruct-layout=5 -mllvm -unroll-threshold=50
-freemap-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
```

605.mcf\_s: Same as 602.gcc\_s

625.x264\_s: Same as 602.gcc\_s

657.xz\_s: basepeak = yes

C++ benchmarks:

```
620.omnetpp_s: -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 -fltto
-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
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2021

Hardware Availability: Apr-2021

Software Availability: Mar-2021

## Peak Optimization Flags (Continued)

620.omnetpp\_s (continued):

-ljemalloc -lflang

623.xalancbmk\_s: basepeak = yes

631.deepsjeng\_s: basepeak = yes

641.leela\_s: Same as 620.omnetpp\_s

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,-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-A1.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-Milan-rev1.0.html>

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

<http://www.spec.org/cpu2017/flags/aocc300-flags-A1.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-Milan-rev1.0.xml>



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.4

PowerEdge R7525 (AMD EPYC 75F3 32-Core Processor)

SPECspeed®2017\_int\_peak = 13.4

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Mar-2021

**Hardware Availability:** Apr-2021

**Software Availability:** Mar-2021

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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.5 on 2021-03-09 16:00:43-0500.  
Report generated on 2021-03-30 15:31:07 by CPU2017 PDF formatter v6442.  
Originally published on 2021-03-30.