### SPEC CPU®2017 Integer Speed Result

**Dell Inc.**

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)

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

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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Specspeed®2017_int_base</th>
<th>Specspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td>9.98</td>
<td>10.4</td>
</tr>
</tbody>
</table>

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#### Hardware

**CPU Name:** AMD EPYC 7F52  
**Max MHz:** 3900  
**Nominal:** 3500  
**Enabled:** 32 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, 16 MB per core  
**Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 3200)  
**Storage:** 1 x 960 GB SATA SSD  
**Other:** None

---

#### Software

**OS:** SUSE Linux Enterprise Server 15 SP1  
**Compiler:** C/C++/Fortran: Version 2.0.0 of AOCC  
**Parallel:** Yes  
**Firmware:** Version 1.4.6 released Apr-2020  
**File System:** tmpfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit  
**Peak Pointers:** 32/64-bit  
**Other:** jemalloc: jemalloc memory allocator library v5.1.0  
**Power Management:** BIOS set to prefer performance at the cost of additional power usage.
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>623.xalancbmk_s</td>
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**SPECspeed\textsuperscript{2017\_int\_base} = 9.98**

**SPECspeed\textsuperscript{2017\_int\_peak} = 10.4**

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>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu

dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were
all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).

Transparent huge pages set to 'always' for this run (OS default)
Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH = "/mnt/ramdisk/cpu2017-1.1.0/amd_speed_aocc200_rome_C_lib/64;/mnt/ramdisk/cpu2017-1.1.0/amd_speed_aocc200_rome_C_lib/32:"
MALLOCONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "32"

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"
OMP_STACKSIZE = "128M"

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 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "0"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using Fedora 26

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)
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 v9.1.0 in Ubuntu 19.04 with -O3 -znver2 -flto
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:
NUMA Nodes Per Socket set to 4
CCX as NUMA Domain set to Enabled
System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost Enabled
Cstates set to Enabled
Memory Patrol Scrub Disabled
Memory Refresh Rate set to 1x
PCI ASPM L1 Link Power Management Disabled
Determinism Slider set to Power Determinism
Efficiency Optimized Mode Disabled
Memory Interleaving set to Auto
ApbDis set to Disabled
DLWM set to Unforced
Logical Processor Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on linux-g3ob Fri Apr 24 11:53:56 2020

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 7F52 16-Core Processor
2  "physical id"s (chips)
32 "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 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60
physical 1: cores 0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60

(Continued on next page)
Dell Inc.

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)

| SPECspeed®2017_int_base = 9.98 |
| SPECspeed®2017_int_peak = 10.4 |

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

Test Date: Apr-2020
Hardware Availability: Jul-2020
Software Availability: Aug-2019

Platform Notes (Continued)

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- Address sizes: 43 bits physical, 48 bits virtual
- CPU(s): 32
- On-line CPU(s) list: 0-31
- Thread(s) per core: 1
- Core(s) per socket: 16
- Socket(s): 2
- NUMA node(s): 32
- Vendor ID: AuthenticAMD
- CPU family: 23
- Model: 49
- Model name: AMD EPYC 7F52 16-Core Processor
- Stepping: 0
- CPU MHz: 3493.596
- BogoMIPS: 6987.19
- Virtualization: AMD-V
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 512K
- L3 cache: 16384K
- NUMA node0 CPU(s): 0
- NUMA node1 CPU(s): 1
- NUMA node2 CPU(s): 2
- NUMA node3 CPU(s): 3
- NUMA node4 CPU(s): 4
- NUMA node5 CPU(s): 5
- NUMA node6 CPU(s): 6
- NUMA node7 CPU(s): 7
- NUMA node8 CPU(s): 8
- NUMA node9 CPU(s): 9
- NUMA node10 CPU(s): 10
- NUMA node11 CPU(s): 11
- NUMA node12 CPU(s): 12
- NUMA node13 CPU(s): 13
- NUMA node14 CPU(s): 14
- NUMA node15 CPU(s): 15
- NUMA node16 CPU(s): 16
- NUMA node17 CPU(s): 17
- NUMA node18 CPU(s): 18
- NUMA node19 CPU(s): 19
- NUMA node20 CPU(s): 20
- NUMA node21 CPU(s): 21
- NUMA node22 CPU(s): 22
- NUMA node23 CPU(s): 23

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Platform Notes (Continued)

NUMA node24 CPU(s): 24
NUMA node25 CPU(s): 25
NUMA node26 CPU(s): 26
NUMA node27 CPU(s): 27
NUMA node28 CPU(s): 28
NUMA node29 CPU(s): 29
NUMA node30 CPU(s): 30
NUMA node31 CPU(s): 31

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm
constant_tsc rep_good nopl xtopology nonstop_tsc cpuid extd_apicid aperfmperf pni
pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx
f16c rdrnd lahf_lm cmp_legacy svm extapic cr8_legacy abi sse4a misalignsse
3dnowprefetch osw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpref
perfctr_l2 mwAITx cpb cat_l3 cdp_l3 hw_pstate sme ssbd sev ibrs ibpb stibp vmmcall
fsrqbase bmi1 avx2 smep bmi2 cmq rdt_a rdsnd adx smap clflushopt clwb sha_ni
xsavemtp xsave vgetbv vxsaves cmq_llc cmq_occup_llc cmq_mbm_total cmq_mbm_local
c1zero irperf xsaveerptr arat npt lbrv svm_lock nrip_save tsc_scale vmbc_clean
flushbyasid decodeassists pflush pfthreshold avic v_vmsave_vmload vgif ump
rpdpd overlow_recov succor smca

/proc/cpuinfo cache data

cache size : 512 KB

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

available: 32 nodes (0-31)
node 0 cpus: 0
node 0 size: 15547 MB
node 0 free: 15484 MB
node 1 cpus: 1
node 1 size: 16127 MB
node 1 free: 16102 MB
node 2 cpus: 2
node 2 size: 16127 MB
node 2 free: 16088 MB
node 3 cpus: 3
node 3 size: 16126 MB
node 3 free: 16096 MB
node 4 cpus: 4
node 4 size: 16098 MB
node 4 free: 16053 MB
node 5 cpus: 5
node 5 size: 16127 MB
node 5 free: 16085 MB
node 6 cpus: 6
node 6 size: 16127 MB

(Continued on next page)
## Dell Inc.

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)

<table>
<thead>
<tr>
<th>Platform Notes (Continued)</th>
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</thead>
<tbody>
<tr>
<td>node 6 free: 16105 MB</td>
</tr>
<tr>
<td>node 7 cpus: 7</td>
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<td>node 7 size: 16126 MB</td>
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<td>node 21 free: 16110 MB</td>
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<td>node 22 cpus: 22</td>
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Platform Notes (Continued)

node 22 size: 16127 MB
node 22 free: 16111 MB
node 23 cpus: 23
node 23 size: 16126 MB
node 23 free: 16107 MB
node 24 cpus: 24
node 24 size: 16127 MB
node 24 free: 14249 MB
node 25 cpus: 25
node 25 size: 16127 MB
node 25 free: 16089 MB
node 26 cpus: 26
node 26 size: 16127 MB
node 26 free: 11552 MB
node 27 cpus: 27
node 27 size: 16126 MB
node 27 free: 16035 MB
node 28 cpus: 28
node 28 size: 16127 MB
node 28 free: 16110 MB
node 29 cpus: 29
node 29 size: 16127 MB
node 29 free: 16111 MB
node 30 cpus: 30
node 30 size: 16127 MB
node 30 free: 16111 MB
node 31 cpus: 31
node 31 size: 16126 MB
node 31 free: 16110 MB
node distances:

(Continued on next page)
## SPEC CPU®2017 Integer Speed Result

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(Continued on next page)
Dell Inc.  
PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)  

SPECspeed®2017_int_base = 9.98  
SPECspeed®2017_int_peak = 10.4

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

Platform Notes (Continued)

From /proc/meminfo

MemTotal: 527825808 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

NAME="SLES"  
VERSION="15-SP1"  
VERSION_ID="15.1"  
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"  
ID="sles"  
ID_LIKE="suse"  
ANSI_COLOR="0;32"  
CPE_NAME="cpe:/o:suse:sles:15:sp1"

uname -a:

Linux linux-g3ob 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)  
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: __user pointer sanitization  
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling

run-level 3 Apr 24 11:51 last=5

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.0

Filesystem Type Size Used Avail Use% Mounted on

tmpfs tmpfs 225G 4.3G 221G 2% /mnt/ramdisk

From /sys/devices/virtual/dmi/id

BIOS: Dell Inc. 1.4.6 04/10/2020  
Vendor: Dell Inc.  
Product: PowerEdge R7525  
Product Family: PowerEdge  
Serial: 48LN333

(Continued on next page)
Platform Notes (Continued)

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 accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:
16x 802C80B3802C 36ASF4G72P2-3G2E7 32 GB 2 rank 3200
16x Not Specified Not Specified

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>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)</th>
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<tr>
<td>AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)</td>
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<tr>
<td>Target: x86_64-unknown-linux-gnu</td>
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<tr>
<td>Thread model: posix</td>
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<tr>
<td>InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin</td>
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<tr>
<td>C++</td>
<td>623.xalancbmk_s(peak)</td>
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<td>C++</td>
<td>620.omnetpp_s(base, peak) 623.xalancbmk_s(base) 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)</td>
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<td>---------------------------------------------------------------------</td>
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</table>

(Continued on next page)
Compiler Version Notes (Continued)

C++ | 623.xalancbmk_s(peak)

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
   AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

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

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
   AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

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

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
   AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

Base Compiler Invocation

C benchmarks:
   clang

C++ benchmarks:
   clang++

Fortran benchmarks:
   flang
# SPEC CPU®2017 Integer Speed Result

**Dell Inc. PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)**

<table>
<thead>
<tr>
<th>SpecCPU2017 License: 55</th>
<th>Test Date: Apr-2020</th>
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<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Jul-2020</td>
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<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Aug-2019</td>
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</tbody>
</table>

**SPECspeed®2017_int_base = 9.98**

**SPECspeed®2017_int_peak = 10.4**

## 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.leea_s: -DSPEC_LP64`
- `648.exchange2_s: -DSPEC_LP64`
- `657.xz_s: -DSPEC_LP64`

## Base Optimization Flags

### C benchmarks:

- `-fprofile -Wl,-mllvm -Wl,-function-specialize`
- `-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC`
- `-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math`
- `-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50`
- `-fremap-arrays -mllvm -function-specialize -mllvm -enable-gvn-hoist`
- `-mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp`
- `-mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000`
- `-flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp`
- `-fopenmp=libomp -lomp -lpthread -ldl -lmvec -ldamdbib -ljemalloc`
- `-flang`

### C++ benchmarks:

- `-fprofile -Wl,-mllvm -Wl,-function-specialize`
- `-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC`
- `-Wl,-mllvm -Wl,-reduce-array-computations=3 `-O3 -ffast-math`
- `-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50`
- `-fremap-arrays -mllvm -function-specialize -mllvm -enable-gvn-hoist`
- `-mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp`
- `-mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000`
- `-flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp`
- `-fopenmp=libomp -lomp -lpthread -ldl -lmvec -ldamdbib -ljemalloc`
- `-flang`

### Fortran benchmarks:

- `-fprofile -Wl,-mllvm -Wl,-function-specialize`
- `-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC`
- `-Wl,-mllvm -Wl,-reduce-array-computations=3 -ffast-math`
- `-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop`
- `-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver2 -funroll-loops`
- `-Mrecursive -mllvm -vector-library=LIBMVEC -z muldefs`
- `-mllvm -disable-indvar-simplify -mllvm -unroll-aggressive`

(Continued on next page)
**SPEC CPU®2017 Integer Speed Result**

**Dell Inc.**

**PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)**

**SPECspeed®2017_int_base = 9.98**

**SPECspeed®2017_int_peak = 10.4**

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Apr-2020

**Hardware Availability:** Jul-2020

**Software Availability:** Aug-2019

### Base Optimization Flags (Continued)

Fortran benchmarks (continued):

- `mllvm -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -lflang`

### Base Other Flags

- C benchmarks:
  - `-Wno-return-type`

- C++ benchmarks:
  - `-Wno-return-type`

- Fortran benchmarks:
  - `-Wno-return-type`

### Peak Compiler Invocation

- C benchmarks: `clang`

- C++ benchmarks: `clang++`

- Fortran benchmarks: `flang`

### Peak 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 -D_FILE_OFFSET_BITS=64`
- `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`
SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)

SPECspeed®2017_int_base = 9.98
SPECspeed®2017_int_peak = 10.4

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

Test Date: Apr-2020
Hardware Availability: Jul-2020
Software Availability: Aug-2019

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -flto -Wl,-ml1vm -Wl,-function-specialize
-Wl,-ml1vm -Wl,-region-vectorize
-Wl,-ml1vm -Wl,-vector-library=LIBMVEC
-Wl,-ml1vm -Wl,-reduce-array-computations=3
-fprofile-instr-generate(pass1)
-fprofile-instr-use(pass2) -Ofast -march=znver2
-mno-ss4a -fstruct-layout=5
-ml1vm -vectorize-memory-aggressively
-ml1vm -function-specialize -ml1vm -enable-gvn-hoist
-ml1vm -unroll-threshold=50 -fremap-arrays
-ml1vm -vector-library=LIBMVEC
-ml1vm -reduce-array-computations=3
-ml1vm -global-vectorize-slp -ml1vm -inline-threshold=1000
-flv-function-specialization -DSPEC_OPENMP -fopenmp
-lnvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ldl
-ljemalloc -lflang

602.gcc_s: -flto -Wl,-ml1vm -Wl,-function-specialize
-Wl,-ml1vm -Wl,-region-vectorize
-Wl,-ml1vm -Wl,-vector-library=LIBMVEC
-Wl,-ml1vm -Wl,-reduce-array-computations=3 -Ofast
-march=znver2 -mno-ss4a -fstruct-layout=5
-ml1vm -vectorize-memory-aggressively
-ml1vm -function-specialize -ml1vm -enable-gvn-hoist
-ml1vm -unroll-threshold=50 -fremap-arrays
-ml1vm -vector-library=LIBMVEC
-ml1vm -reduce-array-computations=3
-ml1vm -global-vectorize-slp -ml1vm -inline-threshold=1000
-flv-function-specialization -z muldefs -DSPEC_OPENMP
-fopenmp -fgnu89-inline -fopenmp=libomp -lomp -lpthread -ldl
-ljemalloc

605.mcf_s: -flto -Wl,-ml1vm -Wl,-function-specialize
-Wl,-ml1vm -Wl,-region-vectorize
-Wl,-ml1vm -Wl,-vector-library=LIBMVEC
-Wl,-ml1vm -Wl,-reduce-array-computations=3 -Ofast
-march=znver2 -mno-ss4a -fstruct-layout=5
-ml1vm -vectorize-memory-aggressively
-ml1vm -function-specialize -ml1vm -enable-gvn-hoist
-ml1vm -unroll-threshold=50 -fremap-arrays
-ml1vm -vector-library=LIBMVEC
-ml1vm -reduce-array-computations=3
-ml1vm -global-vectorize-slp -ml1vm -inline-threshold=1000
-flv-function-specialization -DSPEC_OPENMP -fopenmp

(Continued on next page)
SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)

SPECspeed®2017_int_base = 9.98
SPECspeed®2017_int_peak = 10.4

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

Test Date: Apr-2020
Hardware Availability: Jul-2020
Software Availability: Aug-2019

Peak Optimization Flags (Continued)

605.mcf_s (continued):
- lmvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ldl
- ljemalloc -lflang

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: -flto -Wl,-mllvm -Wl,-function-specialize
- Wl,-mllvm -Wl,-region-vectorize
- Wl,-mllvm -Wl,-vector-library=LIBMVEC
- Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
- march=znver2 -flv-function-specialization
- mllvm -unroll-threshold=100
- mllvm -enable-partial-unswitch
- mllvm -loop-unswitch-threshold=200000
- mllvm -vector-library=LIBMVEC
- mllvm -inline-threshold=1000 -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
- ljemalloc -lflang

623.xalancbmk_s: -m32 -flto -Wl,-mllvm -Wl,-function-specialize
- Wl,-mllvm -Wl,-region-vectorize
- Wl,-mllvm -Wl,-vector-library=LIBMVEC
- Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
- march=znver2 -flv-function-specialization
- mllvm -unroll-threshold=100
- mllvm -enable-partial-unswitch
- mllvm -loop-unswitch-threshold=200000
- mllvm -vector-library=LIBMVEC
- mllvm -inline-threshold=1000 -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
- ljemalloc -lflang

631.deepsjeng_s: Same as 620.omnetpp_s

641.leela_s: basepeak = yes

Fortran benchmarks:

- flto -Wl,-mllvm -Wl,-function-specialize
- Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
- Wl,-mllvm -Wl,-reduce-array-computations=3 -ffast-math
- Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
- Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver2 -funroll-loops
- Mrecursive -mllvm -vector-library=LIBMVEC

(Continued on next page)
Dell Inc.

PowerEdge R7525 (AMD EPYC 7F52, 3.50 GHz)  

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SPECspeed®2017_int_peak = 10.4

CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Tested by: Dell Inc.  
Test Date: Apr-2020  
Hardware Availability: Jul-2020  
Software Availability: Aug-2019

Peak Optimization Flags (Continued)

Fortran benchmarks (continued):
-mlirv -disable-indvar-simplify -mlirv -unroll-aggressive
-mlirv -unroll-threshold=150 -DSPEC_OPENMP -fopenmp -fopenmp=libomp
-lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -lflang

Peak Other Flags

C benchmarks:
-Wno-return-type

C++ benchmarks (except as noted below):
-Wno-return-type

623.xalancbmks_s: -Wno-return-type
-L/sppo/dev/cpu2017/v110/amd_speed_aocc200_rome_C_lib/32

Fortran benchmarks:
-Wno-return-type

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

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

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

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