**SPEC CPU®2017 Integer Speed Result**

**Dell Inc.**

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)  

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>12.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_int_peak</td>
<td>12.5</td>
</tr>
</tbody>
</table>

**CPU2017 License**: 55  
**Test Sponsor**: Dell Inc.  
**Tested by**: Dell Inc.  
**Test Date**: Mar-2021  
**Hardware Availability**: Apr-2021  
**Software Availability**: Mar-2021

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_int_base (12.5)</th>
<th>SPECspeed®2017_int_peak (12.5)</th>
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<tbody>
<tr>
<td>64</td>
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<tr>
<td>600.perlbench_s</td>
<td>7.20</td>
<td>13.3</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>7.28</td>
<td>13.3</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>8.26</td>
<td>20.7</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>8.33</td>
<td>20.8</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
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<td>14.3</td>
</tr>
<tr>
<td>625.x264_s</td>
<td></td>
<td>17.3</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>6.32</td>
<td>17.3</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>5.87</td>
<td>23.6</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td></td>
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</tr>
<tr>
<td>657.xz_s</td>
<td></td>
<td>26.0</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>26.2</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name**: AMD EPYC 7543  
- **Max MHz**: 3700  
- **Nominal**: 2800  
- **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 core, 32 MB shared / 4 cores  
- **Other**: None  
- **Memory**: 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-R)  
- **Storage**: 225 GB on tmpfs  
- **Other**: None

**Software**

- **OS**: Red Hat Enterprise Linux 8.3 (Ootpa)  
- **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

## Dell Inc.

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

**SPECspeed®2017_int_base = 12.5**

**SPECspeed®2017_int_peak = 12.5**

---

**Results Table**

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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Ratio</th>
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<th>Peak</th>
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<th>Ratio</th>
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<tr>
<td>648.exchange2_s</td>
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<td>657.xz_s</td>
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<td></td>
</tr>
</tbody>
</table>

**SPECspeed®2017_int_base = 12.5**

**SPECspeed®2017_int_peak = 12.5**

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

---

## Compiler Notes


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## 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 limit
'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.
'echo 8 > /proc/sys/vm/drop_caches' run as root to reset filesystem caches.
'echo 0 > /proc/sys/vm/randomize_va_space' run as root to disable address space layout randomization (ASLR) to reduce run-to-run variability.

(Continued on next page)
Dell Inc. PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

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CPU2017 License: 55  Test Date: Mar-2021
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Operating System Notes (Continued)

To enable Transparent Hugepages (THP) for all allocations,
'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_SCHEDULER = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "64"

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 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"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-63"
Dell Inc.

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

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<td>Dell Inc.</td>
<td>Software Availability:</td>
<td>Mar-2021</td>
</tr>
</tbody>
</table>

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) 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 e8664e66d2d7080afea89d4b38e2flc
running on localhost.localdomain Mon Mar 22 03:10:47 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 7543 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

(Continued on next page)
Dell Inc.

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

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**SPEC CPU®2017 Integer Speed Result**

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---

### Platform Notes (Continued)

```plaintext
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
- **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 7543 32-Core Processor
- **Stepping:** 1
- **CPU MHz:** 1599.337
- **BogoMIPS:** 5589.47
- **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 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 bptext perfctr_llc mwaitx cpb

(Continued on next page)
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Platform Notes (Continued)

cat_l3 cdp_l3 invpcid_single hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall  
fsqsbase bni1 avx2 smep bmi2 invpcid cq m rdt_a rdseed adx smap clflushopt clwb  
sha_ni xsaveopt xsavec xgetbv1 xsavees cqm llc cqm_occu llc cqm_mbm_total  
cqm_mbm_local clzero irperf xsaveerptr wbnoinvd amd_ppin arat npt lbv svlock  
nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pfthreshold pfthreshold  
v_vmsave_vmload vgif umip pkup ospke vaes vpclmulqdq rdpid overflow_recov succor smca

/proc/cpuinfo cache data  
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: 128584 MB  
node 0 free: 128520 MB  
node 1 cpus: 4 5 6 7  
node 1 size: 129018 MB  
node 1 free: 128836 MB  
node 2 cpus: 8 9 10 11  
node 2 size: 129016 MB  
node 2 free: 128970 MB  
node 3 cpus: 12 13 14 15  
node 3 size: 129020 MB  
node 3 free: 128957 MB  
node 4 cpus: 16 17 18 19  
node 4 size: 129020 MB  
node 4 free: 128954 MB  
node 5 cpus: 20 21 22 23  
node 5 size: 129018 MB  
node 5 free: 128954 MB  
node 6 cpus: 24 25 26 27  
node 6 size: 129018 MB  
node 6 free: 128916 MB  
node 7 cpus: 28 29 30 31  
node 7 size: 116871 MB  
node 7 free: 116798 MB  
node 8 cpus: 32 33 34 35  
node 8 size: 129022 MB  
node 8 free: 128948 MB  
node 9 cpus: 36 37 38 39  
node 9 size: 129018 MB  
node 9 free: 128947 MB  
node 10 cpus: 40 41 42 43  
node 10 size: 129020 MB  
node 10 free: 124019 MB  
node 11 cpus: 44 45 46 47

(Continued on next page)
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---

**Platform Notes (Continued)**

node 11 size: 129022 MB
node 11 free: 128967 MB
node 12 cpus: 48 49 50 51
node 12 size: 129010 MB
node 12 free: 128974 MB
node 13 cpus: 52 53 54 55
node 13 size: 129018 MB
node 13 free: 128981 MB
node 14 cpus: 56 57 58 59
node 14 size: 129020 MB
node 14 free: 128863 MB
node 15 cpus: 60 61 62 63
node 15 size: 129016 MB
node 15 free: 128878 MB

node distances:

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<th>0</th>
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<th>2</th>
<th>3</th>
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<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
</tbody>
</table>

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"

(Continued on next page)
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Platform Notes (Continued)

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 4.18.0-240.10.1.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): Mitigation: Speculative Store
CVE-2018-3639 (Speculative Store Bypass): 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 retropoline,
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 22 03:08 last=5
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.5
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 225G 4.7G 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 SMI BIOS" standard.
Memory:

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

**Dell Inc.**

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>12.5</th>
</tr>
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<tbody>
<tr>
<td>SPECspeed®2017_int_peak</td>
<td>12.5</td>
</tr>
</tbody>
</table>

**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)**

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

(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
SPECCPU®2017 Integer Speed Result

Dell Inc.
PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

SPECspeed®2017_int_base = 12.5
SPECspeed®2017_int_peak = 12.5

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

C benchmarks:
clang

C++ benchmarks:
clang++

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
-fremap-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

(Continued on next page)
### Dell Inc.

**PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)**

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**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:**

- `-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`
- `-fllvm -unroll-threshold=100 -finline-aggressive`
- `-fllvm-function-specialization -mllvm -loop-unswitch-threshold=200000`
- `-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch`
- `-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`

(Continued on next page)
Peak Compiler Invocation (Continued)

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
-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 -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slsp=true -mllvm -function-specialize
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-llflang

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 -flto
-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-slsp=true
-mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-lljemalloc -llflang

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Dell Inc.

PowerEdge R7525 (AMD EPYC 7543 32-Core Processor)

SPECspeed®2017_int_base = 12.5
SPECspeed®2017_int_peak = 12.5

Peak Optimization Flags (Continued)

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

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

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