Dell Inc.

PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)

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

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

**Threads**

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Threads</th>
<th>SPECspeed(^{2017_\text{int}_{-}\text{base}})</th>
<th>SPECspeed(^{2017_\text{int}_{-}\text{peak}})</th>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>64</td>
<td>7.39</td>
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<tr>
<td>602.gcc_s</td>
<td>64</td>
<td>13.4</td>
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<tr>
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<tr>
<td>631.deepsjeng_s</td>
<td>64</td>
<td>6.37</td>
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<tr>
<td>641.leela_s</td>
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<tr>
<td>648.exchange2_s</td>
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<td>23.7</td>
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</tr>
<tr>
<td>657.xz_s</td>
<td>64</td>
<td>26.3</td>
<td>26.3</td>
</tr>
</tbody>
</table>

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**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 chip, 32 MB shared / 4 cores
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)
- **Storage:** 64 GB on tmpfs
- **Other:** None

**Software**

- **OS:** Red Hat Enterprise Linux 8.3 (Ootpa) 4.18.0-240.el8.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 set to prefer performance at the cost of additional power usage
## Dell Inc.

PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)  

**SPEC Benchmark Results**  

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Seconds</th>
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<td>7.43</td>
<td>240</td>
<td>7.39</td>
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<td></td>
<td>241</td>
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<td></td>
<td>235</td>
<td>26.3</td>
<td>235</td>
<td>26.3</td>
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</tbody>
</table>

**Results Table**

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

### Compiler Notes


### 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

Dell Inc.
PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)

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

Operating System Notes (Continued)
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root to enable
Transparent Hugepages (THP) for this run.
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root for peak
runs of 628.pop2_s and 638.imagick_s to enable THP only on request.

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;" 
MALLOCONF = "retain: true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "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 623.xalancbmk_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 631.deepsjeng_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"

(Continued on next page)
Environment Variables Notes (Continued)

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

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.
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 : Disabled
  Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.5/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on rhel-8-3-amd Thu Feb 25 13:03:04 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

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

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CPU2017 License: 55
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Platform Notes (Continued)

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
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: 1613.422
BogoMIPS: 5589.79
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

(Continued on next page)
Dell Inc. PowerEdge R6525 (AMD EPYC 7543 32-Core Processor) SPECspeed®2017_int_base = 12.5
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Platform Notes (Continued)
rdrand lahfm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnoprefetch
osvw ibs skinit wdt tcetopoext perfctr_core perfctr_nb bptest perfctr_llc mwaitx cpb
cat_l3 cdpl_l3 invpcid_single hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall
fsgsbase bmovl avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb
sha ni xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occupation_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_recover succor smca

/proc/cpuinfo cache data
cache size : 512 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
database
available: 16 nodes (0-15)
node 0 cpus: 0 1 2 3
node 0 size: 31817 MB
node 0 free: 31750 MB
node 1 cpus: 4 5 6 7
node 1 size: 32217 MB
node 1 free: 32089 MB
node 2 cpus: 8 9 10 11
node 2 size: 32248 MB
node 2 free: 32181 MB
node 3 cpus: 12 13 14 15
node 3 size: 32254 MB
node 3 free: 32153 MB
node 4 cpus: 16 17 18 19
node 4 size: 32254 MB
node 4 free: 32175 MB
node 5 cpus: 20 21 22 23
node 5 size: 32250 MB
node 5 free: 32193 MB
node 6 cpus: 24 25 26 27
node 6 size: 32252 MB
node 6 free: 32085 MB
node 7 cpus: 28 29 30 31
node 7 size: 32234 MB
node 7 free: 32152 MB
node 8 cpus: 32 33 34 35
node 8 size: 32250 MB
node 8 free: 32169 MB
node 9 cpus: 36 37 38 39
node 9 size: 32250 MB
node 9 free: 32167 MB
node 10 cpus: 40 41 42 43
node 10 size: 32250 MB

(Continued on next page)
SPEC CPU®2017 Integer Speed Result
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PowerEdge R6525 (AMD EPYC 7543 32-Core Processor) 

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Platform Notes (Continued)

node 10 free: 32169 MB
node 11 cpus: 44 45 46 47
node 11 size: 32248 MB
node 11 free: 32152 MB
node 12 cpus: 48 49 50 51
node 12 size: 32254 MB
node 12 free: 26752 MB
node 13 cpus: 52 53 54 55
node 13 size: 32254 MB
node 13 free: 32219 MB
node 14 cpus: 56 57 58 59
node 14 size: 32250 MB
node 14 free: 32217 MB
node 15 cpus: 60 61 62 63
node 15 size: 32250 MB
node 15 free: 32250 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

From /proc/meminfo
MemTotal: 527955508 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

From /etc/*release* /etc/*version*
on-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"

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

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PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)

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<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<tr>
<td>12.5</td>
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Platform Notes (Continued)

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 rhel-8-3-amd 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 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 Bypass disabled via prctl and seccomp
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5753 (Spectre variant 1): Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBF: disabled, RSB filling
CVE-2017-5715 (Spectre variant 2): Not affected
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Feb 25 12:54 last=5

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.5
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 64G 5.3G 59G 9% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R6525
Product Family: PowerEdge
Serial: C3KRPX2

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

(Continued on next page)
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Platform Notes (Continued)

frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.
Memory:
1x 80AD80B380AD HMA84GR7CJR4N-XN 32 GB 2 rank 3200
15x 80AD863280AD HMA84GR7CJR4N-XN 32 GB 2 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
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(Continued on next page)
### Dell Inc.

**PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)**

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**Compiler Version Notes (Continued)**

**Base Compiler Invocation**

- **C benchmarks:**
  - clang

- **C++ benchmarks:**
  - clang++

- **Fortran benchmarks:**
  - flang

**Base Portability Flags**

```plaintext
600.perlbench_s: -DSPEC_LINUX_X64  -DSPEC_LP64
602.gcc_s: -DSPEC_LP64
605.mcfc_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 -03 -march=znver3
  - -fvecclib=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
  - -llflang -llflangrti

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Dell Inc.

PowerEdge R6525 (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:** Feb-2021  
**Hardware Availability:** Mar-2021  
**Software Availability:** Mar-2021

### Base Optimization Flags (Continued)

#### 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-nofallback-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 -reorder-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-nofallback-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`
Dell Inc.
PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)

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Peak Compiler Invocation

C benchmarks:
clang

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-slp=true -mllvm -function-specialize
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-llflang

C++ benchmarks:
-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=1000 -flv-function-specialization
-mllvm -disable-licm-vrp -mllvm -reroll-loops
-mllvm -aggressive-loop-unschedule -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 -ljemalloc -llflang

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PowerEdge R6525 (AMD EPYC 7543 32-Core Processor)  

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<th>SPECspeed®2017_int_base</th>
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Peak Optimization Flags (Continued)

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  
- -march=znver3  
- -fveclib=AMDLIBM  
- -ffast-math  
- -flto  
- -mllvm -unroll-aggressive  
- -mllvm -unroll-threshold=150  
- -DSPEC_OPENMP  
- -fopenmp -fopenmp=libomp  
- -lomp -lamlbility -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: