## Dell Inc.

### PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)

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

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OS:</strong> Red Hat Enterprise Linux 8.3 (Ootpa)</td>
<td><strong>CPU Name:</strong> AMD EPYC 7343</td>
</tr>
<tr>
<td><strong>Compiler:</strong> C/C++/Fortran: Version 3.0.0 of AOCC</td>
<td><strong>Max MHz:</strong> 3900</td>
</tr>
<tr>
<td><strong>Parallel:</strong> Yes</td>
<td><strong>Nominal:</strong> 3200</td>
</tr>
<tr>
<td><strong>Firmware:</strong> Version 2.0.3 released Jan-2021</td>
<td><strong>Enabled:</strong> 32 cores, 2 chips</td>
</tr>
<tr>
<td><strong>File System:</strong> tmpfs</td>
<td><strong>Orderable:</strong> 1,2 chips</td>
</tr>
<tr>
<td><strong>System State:</strong> Run level 3 (multi-user)</td>
<td><strong>Cache L1:</strong> 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Base Pointers:</strong> 64-bit</td>
<td><strong>L2:</strong> 512 KB I+D on chip per core</td>
</tr>
<tr>
<td><strong>Peak Pointers:</strong> 64-bit</td>
<td><strong>L3:</strong> 128 MB I+D on chip per chip, 32 MB shared / 4 cores</td>
</tr>
<tr>
<td><strong>Other:</strong> jemalloc: jemalloc memory allocator library v5.1.0</td>
<td><strong>Other:</strong> None</td>
</tr>
<tr>
<td><strong>Power Management:</strong> BIOS and OS set to prefer performance at the cost of additional power usage.</td>
<td><strong>Memory:</strong> 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)</td>
</tr>
<tr>
<td><strong>Storage:</strong> 225 GB on tmpfs</td>
<td><strong>Other:</strong> None</td>
</tr>
</tbody>
</table>

### SPEC CPU2017 Integer Speed Result

**Dell Inc.**  

**SPECspeed®2017_int_base = 13.0**  
**SPECspeed®2017_int_peak = 13.0**

**SPEC CPU®2017 Integer Speed Result**

**Copyright 2017-2021 Standard Performance Evaluation Corporation**

**Test Date:** Mar-2021  
**Hardware Availability:** Jun-2021  
**Software Availability:** Mar-2021

<table>
<thead>
<tr>
<th>Thread</th>
<th>SPECspeed®2017_int_base (13.0)</th>
<th>SPECspeed®2017_int_peak (13.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>7.69</td>
<td>13.9</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>13.9</td>
<td>21.6</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>8.59</td>
<td>21.7</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>14.9</td>
<td>25.0</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>14.9</td>
<td>25.0</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>6.56</td>
<td>18.1</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>6.38</td>
<td>18.2</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>6.18</td>
<td>6.18</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>25.0</td>
<td>25.6</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>25.0</td>
<td>25.6</td>
</tr>
</tbody>
</table>

**Threads**  

<table>
<thead>
<tr>
<th>CPU Name: AMD EPYC 7343</th>
<th>Max MHz: 3900</th>
<th>Nominal: 3200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled: 32 cores, 2 chips</td>
<td>Orderable: 1.2 chips</td>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2: 512 KB I+D on chip per core</td>
<td>L3: 128 MB I+D on chip per chip, 32 MB shared / 4 cores</td>
<td>Other: None</td>
</tr>
<tr>
<td>Memory: 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)</td>
<td>Storage: 225 GB on tmpfs</td>
<td>Other: None</td>
</tr>
</tbody>
</table>

**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

**Test Date:** Mar-2021  
**Hardware Availability:** Jun-2021  
**Software Availability:** Mar-2021
# SPEC CPU®2017 Integer Speed Result

## Dell Inc.

PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)

---

### SPECspeed®2017_int_base = 13.0

### SPECspeed®2017_int_peak = 13.0

---

---

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base</td>
<td></td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600.perlbench_s</td>
<td>32</td>
<td>231</td>
<td>7.69</td>
<td>230</td>
<td>7.73</td>
<td>32</td>
<td>231</td>
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<tr>
<td>602.gcc_s</td>
<td>32</td>
<td>287</td>
<td>13.9</td>
<td>282</td>
<td>14.0</td>
<td>1</td>
<td>285</td>
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<tr>
<td>605.mcf_s</td>
<td>32</td>
<td>218</td>
<td>21.7</td>
<td>218</td>
<td>21.6</td>
<td>1</td>
<td>217</td>
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<tr>
<td>620.omnetpp_s</td>
<td>32</td>
<td>187</td>
<td>8.72</td>
<td>190</td>
<td>8.59</td>
<td>32</td>
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<tr>
<td>623.xalancbmk_s</td>
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<td>95.3</td>
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<td>14.9</td>
<td>1</td>
<td>94.4</td>
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<tr>
<td>625.x264_s</td>
<td>32</td>
<td>97.3</td>
<td>18.1</td>
<td>97.1</td>
<td>18.2</td>
<td>1</td>
<td>96.9</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>32</td>
<td>218</td>
<td>6.56</td>
<td>217</td>
<td>6.59</td>
<td>1</td>
<td>217</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>32</td>
<td>276</td>
<td>6.18</td>
<td>276</td>
<td>6.19</td>
<td>1</td>
<td>276</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>32</td>
<td>118</td>
<td>25.0</td>
<td>118</td>
<td>25.0</td>
<td>1</td>
<td>117</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>32</td>
<td>242</td>
<td>25.6</td>
<td>241</td>
<td>25.7</td>
<td>32</td>
<td>242</td>
</tr>
</tbody>
</table>

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 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.
'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)

Page 2

Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/
## Dell Inc.

Dell Inc. PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>Dell Inc. PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_int_peak</td>
<td>Dell Inc. PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)</td>
</tr>
</tbody>
</table>

| CPU2017 License: | 55 |
| Test Sponsor: | Dell Inc. |
| Tested by: | Dell Inc. |
| Test Date: | Mar-2021 |
| Hardware Availability: | Jun-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 = "0-31"`
- `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 = "32"

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 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"

### General Notes

Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using openSUSE 15.2

(Continued on next page)
**General Notes (Continued)**

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

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

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

**Platform Notes**

BIOS settings:
- 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 30 04:41:36 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 7343 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 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  - physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(Continued on next page)
Platform Notes (Continued)

From lscpu:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
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): 8
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 7343 16-Core Processor
Stepping: 1
CPU MHz: 3408.682
BogoMIPS: 6388.59
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
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 bptime perfctr_llc mwaitx cpb cat_l3 cmp_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 irperft xsaveeptr wbnoinvd amd_ppin arat npt lbiv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter pffrethoserv v_vmsave_vmload vgif umip pkc ospke vaes vpclmulqdq rdpid overflow_recov succor smca

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

(Continued on next page)
SPEC CPU®2017 Integer Speed Result
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Dell Inc.  SPECspeed®2017_int_base = 13.0
PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)  SPECspeed®2017_int_peak = 13.0

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

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

Platform Notes (Continued)

physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0 1 2 3
  node 0 size: 257592 MB
  node 0 free: 257465 MB
  node 1 cpus: 4 5 6 7
  node 1 size: 258004 MB
  node 1 free: 257900 MB
  node 2 cpus: 8 9 10 11
  node 2 size: 258022 MB
  node 2 free: 257903 MB
  node 3 cpus: 12 13 14 15
  node 3 size: 245903 MB
  node 3 free: 245800 MB
  node 4 cpus: 16 17 18 19
  node 4 size: 258036 MB
  node 4 free: 253512 MB
  node 5 cpus: 20 21 22 23
  node 5 size: 258040 MB
  node 5 free: 257889 MB
  node 6 cpus: 24 25 26 27
  node 6 size: 258036 MB
  node 6 free: 257553 MB
  node 7 cpus: 28 29 30 31
  node 7 size: 257998 MB
  node 7 free: 257553 MB

node distances:
  node 0 1 2 3 4 5 6 7
  0: 10 11 11 11 32 32 32 32
  1: 11 10 11 11 32 32 32 32
  2: 11 11 10 11 32 32 32 32
  3: 11 11 11 10 32 32 32 32
  4: 32 32 32 32 10 11 11 11
  5: 32 32 32 32 11 10 11 11
  6: 32 32 32 32 11 11 10 11
  7: 32 32 32 32 11 11 11 10

From /proc/meminfo
  MemTotal:         2101028480 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

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

From /etc/*release* /etc/*version*
  os-release:

(Continued on next page)
**Platform Notes (Continued)**

```plaintext
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
```

```plaintext
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 sanitation
- **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

```plaintext
run-level 3 Mar 30 04:39 last=5
```

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

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmpfs</td>
<td>tmpfs</td>
<td>225G</td>
<td>4.8G</td>
<td>221G</td>
<td>3%</td>
<td>/mnt/ramdisk</td>
</tr>
</tbody>
</table>

From /sys/devices/virtual/dmi/id

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

Additional information from dmidecode follows. **WARNING:** Use caution when you interpret

(Continued on next page)
Platform Notes (Continued)

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

(End of data from sysinfo program)
Dell Inc.  
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---

**Compiler Version Notes (Continued)**

- InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

---

**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,-mlllvm -Wl,-enable-licm-vrp -Wl,-mlllvm -Wl,-region-vectorize
  - -Wl,-mlllvm -Wl,-function-specialize
  - -Wl,-mlllvm -Wl,-align-all-nofallthru-blocks=6
  - -Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
  - -fveclib=AMDLIBM -ffast-math -fIlto -fstruct-layout=5
  - -mlllvm -unroll-threshold=50 -mlllvm -inline-threshold=1000
  - -freemap-arrays -mlllvm -function-specialize -flv-function-specialization
  - -mlllvm -enable-gvn-hoist -mlllvm -global-vectorize-slp=true
  - -mlllvm -enable-licm-vrp -mlllvm -reduce-array-computations=3 -z muldefs
  - -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc

(Continued on next page)
Dell Inc.  
PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)  

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</tbody>
</table>

Base Optimization Flags (Continued)

C benchmarks (continued):
-`-lflang -lflangrti`

C++ benchmarks:
-`-m64 -std=c++98 -mno-adx -mno-sse4a`
-`-W1,-mlllvm -W1,-do-block-reorder=aggressive`
-`-W1,-mlllvm -W1,-region-vectorize -W1,-mlllvm -W1,-function-specialize`
-`-W1,-mlllvm -W1,-align-all-nofallthru-blocks=6`
-`-W1,-mlllvm -W1,-reduce-array-computations=3 -O3 -march=znver3`
-`-fveclib=AMDLIBM -ffast-math -flto -mlllvm -enable-partial-unswitch`
-`-mlllvm -unroll-threshold=100 -finline-aggressive`
-`-fllvm-function-specialization -mlllvm -loop-unswitch=threshold=200000`
-`-mlllvm -reroll-loops -mlllvm -aggressive-loop-unswitch`
-`-mlllvm -extra-vectorizer-passes -mlllvm -reduce-array-computations=3`
-`-mlllvm -global-vectorize=slp=true -mlllvm -convert-pow-exp-to-int=false`
-`-z muldefs -mlllvm -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 -W1,-mlllvm -W1,-inline-recursion=4`
-`-W1,-mlllvm -W1,-lsr-in-nested-loop -W1,-mlllvm -W1,-enable-iv-split`
-`-W1,-mlllvm -W1,-region-vectorize -W1,-mlllvm -W1,-function-specialize`
-`-W1,-mlllvm -W1,-align-all-nofallthru-blocks=6`
-`-W1,-mlllvm -W1,-reduce-array-computations=3 -O3 -march=znver3`
-`-fveclib=AMDLIBM -ffast-math -flto -z muldefs`
-`-mlllvm -unroll-aggressive -mlllvm -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 R7525 (AMD EPYC 7343 16-Core Processor)

| SPECspeed®2017_int_base = 13.0 |
| SPECspeed®2017_int_peak = 13.0 |

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

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

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:

600.perlbench_s: basepeak = yes

602.gcc_s: -m64 -mno-adx -mno-sse4a -W1, -allow-multiple-definition
-W1, -mllvm -W1, -enable-licm-vrp
-W1, -mllvm -W1, -function-specialize
-W1, -mllvm -W1, -align-all-nofallthru-blocks=6
-W1, -mllvm -W1, -reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -fto
-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 -landlibm -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:

(Continued on next page)
Dell Inc.

PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)

**SPEC CPU®2017 Integer Speed Result**

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**SPECspeed®2017_int_base = 13.0**

**SPECspeed®2017_int_peak = 13.0**

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**Peak Optimization Flags (Continued)**

- 620.omnetpp_s: basepeak = yes
- 623.xalancbmk_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
  -fllvm-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
  -ljemalloc -lflang

- 631.deepsjeng_s: Same as 623.xalancbmk_s

- 641.leela_s: Same as 623.xalancbmk_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
## SPEC CPU®2017 Integer Speed Result

### Dell Inc. PowerEdge R7525 (AMD EPYC 7343 16-Core Processor)

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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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