## Dell Inc.

**PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)**

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>Dell Inc.</th>
<th>Tested by:</th>
<th>Dell Inc.</th>
<th><strong>CPU2017 License:</strong></th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Date:</strong></td>
<td>May-2021</td>
<td><strong>Hardware Availability:</strong></td>
<td>Jun-2021</td>
<td><strong>Software Availability:</strong></td>
<td>Mar-2021</td>
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</tbody>
</table>

### SPEC CPU®2017 Integer Speed Result

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base = 12.4</th>
<th>SPECspeed®2017_int_peak = 12.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td></td>
</tr>
<tr>
<td><strong>SPECspeed</strong>2017_int_base = 12.4</td>
<td>SPECspeed2017_int_peak = 12.4</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** AMD EPYC 7713P
- **Max MHz:** 3675
- **Nominal:** 2000
- **Enabled:** 64 cores, 1 chip
- **Orderable:** 1 chip
- **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 / 8 cores
- **Other:** None
- **Memory:** 1 TB (8 x 128 GB 4Rx4 PC4-3200AA-L)
- **Storage:** 125 GB on tmpfs
- **Other:** None
- **OS:** Red Hat Enterprise Linux 8.3 (Ootpa)
- **Compiler:** 4.18.0-240.22.1.el8_3.x86_64
- **Parallel:** Yes
- **Firmware:** Version 2.2.4 released Apr-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.

### Software

### SPEC CPU®2017 Integer Speed Result

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_int_base (12.4)</th>
<th>SPECspeed®2017_int_peak (12.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>600.perlbench_s: 1/1  13.3</td>
<td>600.perlbench_s: 1/1  13.3</td>
</tr>
<tr>
<td>64</td>
<td>602.gcc_s: 1/1  8.21</td>
<td>602.gcc_s: 1/1  8.21</td>
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<tr>
<td>64</td>
<td>605.mcf_s: 1/1  14.2</td>
<td>605.mcf_s: 1/1  14.2</td>
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<tr>
<td>64</td>
<td>620.omnetpp_s: 1/1  17.2</td>
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<tr>
<td>64</td>
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<td>623.xalancbmk_s: 1/1  20.6</td>
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<tr>
<td>64</td>
<td>625.x264_s: 1/1  23.6</td>
<td>625.x264_s: 1/1  23.6</td>
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<tr>
<td>64</td>
<td>631.deepsjeng_s: 1/1  24.2</td>
<td>631.deepsjeng_s: 1/1  24.2</td>
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<tr>
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<td>641.leela_s: 1/1  24.2</td>
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<tr>
<td>64</td>
<td>648.exchange2_s: 1/1  24.2</td>
<td>648.exchange2_s: 1/1  24.2</td>
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<tr>
<td>64</td>
<td>657.xz_s: 1/1  24.2</td>
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## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
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<tr>
<td>605.mcf_s</td>
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<td>229</td>
<td>20.6</td>
<td>1.00</td>
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<tr>
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<tr>
<td>641.leela_s</td>
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<tr>
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<td>1.00</td>
<td>255</td>
<td>24.2</td>
</tr>
</tbody>
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**SPECspeed®2017_int_base = 12.4**

**SPECspeed®2017_int_peak = 12.4**

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 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)
Dell Inc.

PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)  

**SPEC CPU®2017 Integer Speed Result**  

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<td>SPECspeed®2017_int_peak</td>
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CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Tested by: Dell Inc.  
Test Date: May-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/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 = 
  
/  

  

  

  

  

  

  

  

  

  

  

MALLOC_CONF = "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 641.leela_s peak run:
- `GOMP_CPU_AFFINITY = "0"

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

jemalloc: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)
jemalloc 5.1.0 is available here:

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

Dell Inc.

PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)

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SPECspeed®2017_int_base = 12.4

SPECspeed®2017_int_peak = 12.4

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

General Notes (Continued)

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 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G 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: Disabled
- Power Management: Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.7-aoec300/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on rhel-8-3-amd Tue May 4 05:27:28 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 7713P 64-Core Processor
  1 "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 : 64
  siblings : 64
  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 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
  53 54 55 56 57 58 59 60 61 62 63

From lscpu:

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

Dell Inc.
PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)

SPEC Speed®2017_int_base = 12.4
SPEC Speed®2017_int_peak = 12.4

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

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

Platform Notes (Continued)

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: 64
Socket(s): 1
NUMA node(s): 8
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 7713P 64-Core Processor
Stepping: 1
CPU MHz: 2255.445
BogoMIPS: 3992.13
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 32768K
NUMA node0 CPU(s): 0-7
NUMA node1 CPU(s): 8-15
NUMA node2 CPU(s): 16-23
NUMA node3 CPU(s): 24-31
NUMA node4 CPU(s): 32-39
NUMA node5 CPU(s): 40-47
NUMA node6 CPU(s): 48-55
NUMA node7 CPU(s): 56-63
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 rdtsscp 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 avx f16c
rdimitr lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvwibs skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb
cat_l3 cdpl_l3 invpcid_single hw_pstate sse ssbd mba sev ibrs ibpb stibp vmmcall
fsgsbase bmi avx2 smep bmi2 invpcid cqm rdt_a rseed adx smap clflushopt clwb
sha ni xsaveopt xsave xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local clzero irperf xsaveerptr wbnoinvd amd_ppin arat npt lbrv svm_lock
nrip save tsc_scale vmbc_clean flushbyasid decodeassists pausefilter pfthreshold
v_vmsave_vmload vgif umip pku ospke vaes vpcmflushd qdop id overflow_recover succor
smca

/pro/proc/cpuinfo cache data
cache size : 512 KB

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

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

available: 8 nodes (0-7)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 128455 MB
node 0 free: 128295 MB
node 1 cpus: 8 9 10 11 12 13 14 15
node 1 size: 129015 MB
node 1 free: 128844 MB
node 2 cpus: 16 17 18 19 20 21 22 23
node 2 size: 129021 MB
node 2 free: 128769 MB
node 3 cpus: 24 25 26 27 28 29 30 31
node 3 size: 129015 MB
node 3 free: 128718 MB
node 4 cpus: 32 33 34 35 36 37 38 39
node 4 size: 129019 MB
node 4 free: 125160 MB
node 5 cpus: 40 41 42 43 44 45 46 47
node 5 size: 129015 MB
node 5 free: 128883 MB
node 6 cpus: 48 49 50 51 52 53 54 55
node 6 size: 129019 MB
node 6 free: 128866 MB
node 7 cpus: 56 57 58 59 60 61 62 63
node 7 size: 116871 MB
node 7 free: 116730 MB
node distances:

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>10</td>
</tr>
</tbody>
</table>

From /proc/meminfo
MemTotal: 1043930236 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"

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

```
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
uname -a:
    Linux rhel-8-3-amd 4.18.0-240.22.1.el8_3.x86_64 #1 SMP Thu Mar 25 14:36:04 EDT 2021
    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

```
run-level 3 Nov 26 04:46
```

```
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.7-aocc300
Filesystem  Type  Size  Used Avail Use% Mounted on
tmpfs  tmpfs  125G  3.7G  122G  3% /mnt/ramdisk
```

From /sys/devices/virtual/dmi/id
```
Vendor: Dell Inc.
Product: PowerEdge R7515
Product Family: PowerEdge
Serial: 5MGPH13
```

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow
**SPEC CPU®2017 Integer Speed Result**

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**Test Sponsor:** Dell Inc.  
**Hardware Availability:** Jun-2021  
**Tested by:** Dell Inc.  
**Software Availability:** Mar-2021

**Platform Notes (Continued)**

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:**
  - 8x 80CE80B380CE M386AAG40AM3-CW 128 GB 4 rank 3200
  - 8x Not Specified Not Specified

- **BIOS:**
  - BIOS Vendor: Dell Inc.
  - BIOS Version: 2.2.4
  - BIOS Date: 04/12/2021
  - BIOS Revision: 2.2

*(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.xalanchmk_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

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

Dell Inc.  
PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)  

<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
<th>Test Date: May-2021</th>
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<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Jun-2021</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Mar-2021</td>
</tr>
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</table>

**Compiler Version Notes (Continued)**

### Base Compiler Invocation

C benchmarks:  
clang

C++ benchmarks:  
clang++

Fortran benchmarks:  
flang

### Base Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>-DSPEC_LINUX_X64 -DSPEC_LP64</td>
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<tr>
<td>602gcc_s</td>
<td>-DSPEC_LP64</td>
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<tr>
<td>605.mcf_s</td>
<td>-DSPEC_LP64</td>
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<tr>
<td>620.omnetpp_s</td>
<td>-DSPEC_LP64</td>
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<tr>
<td>623.xalancbmk_s</td>
<td>-DSPEC_LINUX -DSPEC_LP64</td>
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<td>625.x264_s</td>
<td>-DSPEC_LP64</td>
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<td>631.deepsjeng_s</td>
<td>-DSPEC_LP64</td>
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<tr>
<td>641.leela_s</td>
<td>-DSPEC_LP64</td>
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<tr>
<td>648.exchange2_s</td>
<td>-DSPEC_LP64</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>-DSPEC_LP64</td>
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</table>

### Base Optimization Flags

C benchmarks:  
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition  
-Wl,-mllvm -Wl,-enable-lcvm-vrp -Wl,-mllvm -Wl,-region-vectorize  
-Wl,-mllvm -Wl,-function-specialize  
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-executions=3 -O3 -march=znver3  
-fvecclib=AMDLIBM -ffast-math -flto -fstruct-layout=5  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-freemap-arrays -mllvm -function-specialize -flv-function-specialization -mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true  
-mllvm -enable-lcvm-vrp -mllvm -reduce-array-executions=3 -z mudef -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -ldl -ljemalloc -llflang  

(Continued on next page)
Dell Inc.

PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)

SPEC CPU®2017 Integer Speed Result

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Dell Inc.

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

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

SPECspeed®2017_int_base = 12.4
SPECspeed®2017_int_peak = 12.4

Base Optimization Flags (Continued)

C++ benchmarks:
- -m64 -std=c++98 -mno-adx -mno-sse4a
- -W1,-ml1vm -W1,-do-block-reorder=aggressive
- -W1,-ml1vm -W1,-region-vectorize -W1,-ml1vm -W1,-function-specialize
- -W1,-ml1vm -W1,-align-all=nofallthru-blocks=6
- -W1,-ml1vm -W1,-reduce-array-computations=3 -O3 -march=znver3
- -fveclib=AMDLIBM -ffast-math -flto -ml1vm -enable-partial-unswitch
- -ml1vm -unroll-threshold=100 -finline-aggressive
- -flv-function-specialization -ml1vm -loop-unswitch-threshold=200000
- -ml1vm -reroll-loops -ml1vm -aggressive-loop-unswitch
- -ml1vm -extra-vectorizer-passes -ml1vm -reduce-array-computations=3
- -ml1vm -global-vectorize-slp=true -ml1vm -convert-pow-exp-to-int=false
- -z muldefs -ml1vm -do-block-reorder=aggressive
- -fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
- -openmp -openmp=libomp -lomp -lamdlibm -ljemalloc -lflang -lflangrti

Fortran benchmarks:
- -m64 -mno-adx -mno-sse4a -W1,-ml1vm -W1,-inline-recursion=4
- -W1,-ml1vm -W1,-lsr-in-nested-loop -W1,-ml1vm -W1,-enable-iv-split
- -W1,-ml1vm -W1,-region-vectorize -W1,-ml1vm -W1,-function-specialize
- -W1,-ml1vm -W1,-align-all=nofallthru-blocks=6
- -W1,-ml1vm -W1,-reduce-array-computations=3 -O3 -march=znver3
- -fveclib=AMDLIBM -ffast-math -flto -z muldefs
- -ml1vm -unroll-aggressive -ml1vm -unroll-threshold=150 -DSPEC_OPENMP
- -openmp -openmp=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
# SPEC CPU®2017 Integer Speed Result

**Dell Inc.**

PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<td>12.4</td>
<td>12.4</td>
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**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

| Test Date: | May-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: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition  
- -Wl,-mlllvm -Wl,-enable-licm-vrp  
- -Wl,-mlllvm -Wl,-function-specialize  
- -Wl,-mlllvm -Wl,-align-all-nofallthru-blocks=6  
- -Wl,-mlllvm -Wl,-reduce-array-computations=3 -Ofast  
- -march=znver3 -fveclib=AMDLIBM -ffast-math -flto  
- -fstruct-layout=5 -mlllvm -unroll-threshold=50  
- -fremap-arrays -flv-function-specialization  
- -mlllvm -inline-threshold=1000 -mlllvm -enable-gvn-hoist  
- -mlllvm -global-vectorize-slp=true  
- -mlllvm -function-specialize -mlllvm -enable-licm-vrp  
- -mlllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp  
- -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang  
- 602.gcc_s: Same as 600.perlbench_s

- 605.mcf_s: Same as 600.perlbench_s

- 625.x264_s: basepeak = yes

- 657.xz_s: Same as 600.perlbench_s

C++ benchmarks:

(Continued on next page)
Peak Optimization Flags (Continued)

620.omnetpp_s: -m64 -std=c++98 -mno-adx -mno-sse4a
- W1, -mlllvm -W1, -do-block-reorder=aggressive
- W1, -mlllvm -W1, -function-specialize
- W1, -mlllvm -W1, -align-all-nofallthru-blocks=6
- W1, -mlllvm -W1, -reduce-array-computations=3 -Ofast
- march=znver3 -fveclib=AMDLIBM -ffast-math -flto
- finline-aggressive -mlllvm -unroll-threshold=100
- fvl-function-specialization -mlllvm -enable-llicm-vrp
- mlllvm -reroll-loops -mlllvm -aggressive-loop-unswitch
- mlllvm -reduce-array-computations=3
- mlllvm -global-vectorize-slp=true
- mlllvm -do-block-reorder=aggressive
- fvirtual-function-elimination -fvisibility=hidden
- DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
- ljemalloc -lflang

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: Same as 620.omnetpp_s

Fortran benchmarks:

648.exchange2_s: basepeak = yes

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
### SPEC CPU®2017 Integer Speed Result

**Dell Inc.**

**PowerEdge R7515 (AMD EPYC 7713P 64-Core Processor)**

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<th>Value</th>
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<tr>
<td>SPECspeed\textsuperscript{2017_int_peak}</td>
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**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** May-2021  
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**Software Availability:** Mar-2021

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


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Tested with SPEC CPU\textsuperscript{2017 v1.1.7} on 2021-05-04 06:27:27-0400.
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