## Dell Inc.

**PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)**

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

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### SPEC CPU®2017 Integer Speed Result

**SPECspeed®2017_int_base** = 12.0  
**SPECspeed®2017_int_peak** = 12.0

---

<table>
<thead>
<tr>
<th>Test</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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<tbody>
<tr>
<td>600.perlbench_s</td>
<td>6.89</td>
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<tr>
<td>602.gcc_s</td>
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<td>12.8</td>
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<td>605.mcf_s</td>
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<td>12.9</td>
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<tr>
<td>620.omnetpp_s</td>
<td>8.21</td>
<td>20.0</td>
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<tr>
<td>623.xalancbmk_s</td>
<td>13.7</td>
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<tr>
<td>625.x264_s</td>
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<td>16.4</td>
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<tr>
<td>631.deepsjeng_s</td>
<td>6.21</td>
<td>16.5</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>5.51</td>
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<tr>
<td>648.exchange2_s</td>
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<td>22.4</td>
</tr>
<tr>
<td>657.xz_s</td>
<td></td>
<td>24.4</td>
</tr>
</tbody>
</table>

---

### Hardware

- **CPU Name**: AMD EPYC 7763  
- **Max MHz**: 3500  
- **Nominal**: 2450  
- **Enabled**: 128 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 / 8 cores  
- **Other**: None

- **Memory**: 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)  
- **Storage**: 128 GB on tmpfs

---

### Software

- **OS**: Red Hat Enterprise Linux 8.3 (Ootpa)  
- **Compiler**: C/C++/Fortran: Version 3.0.0 of AOCC  
- **Parallel**: Yes  
- **Firmware**: Version 2.2.5 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.
### 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>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tr>
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<td>310</td>
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<td>13.7</td>
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<tr>
<td>631.deepsjeng_s</td>
<td>128</td>
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<td>6.21</td>
<td>231</td>
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<td>253</td>
<td>24.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</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 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)
**SPEC CPU®2017 Integer Speed Result**

**Dell Inc.**

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**SPECspeed®2017_int_base = 12.0**

**SPECspeed®2017_int_peak = 12.0**

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

**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 = "0-127"
- LD_LIBRARY_PATH = 
  "/mnt/ramdisk/cpu2017-1.1.7-aocc300-B2/amd_speed_aocc300_milan_B_lib/lib
  ;/mnt/ramdisk/cpu2017-1.1.7-aocc300-B2/amd_speed_aocc300_milan_B_lib/lib
  32:"
- MALLOC_CONF = "retain:true"
- OMP_DYNAMIC = "false"
- OMP_SCHEDULE = "static"
- OMP_STACKSIZE = "128M"
- OMP_THREAD_LIMIT = "128"

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"

**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)

(Continued on next page)
Dell Inc.

PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)

SPEC CPU®2017 Integer Speed Result

SPECspeed®2017_int_base = 12.0
SPECspeed®2017_int_peak = 12.0

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

General Notes (Continued)

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

Benchmark run from a 128 GB ramdisk created with the cmd: "mount -t tmpfs -o size=128G 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
- Algorithm Performance: Boost Disable (ApbDis): Enabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.7-aocc300-B2/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2fc
running on rhel-8-3-amd Wed May 19 06:21:22 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 7763 64-Core Processor
- 2 "physical id"s (chips)
- 128 "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

(Continued on next page)
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**CPU2017 License:** 55  
**Test Date:** May-2021  
**Hardware Availability:** Mar-2021  
**Test Sponsor:** Dell Inc.  
**Software Availability:** Mar-2021  
**Tested by:** Dell Inc.

### Platform Notes (Continued)

From `lscpu`:

- **Architecture:** x86_64
- **CPU op-mode(s):** 32-bit, 64-bit
- **Byte Order:** Little Endian
- **CPU(s):** 128
- **On-line CPU(s) list:** 0-127
- **Thread(s) per core:** 1
- **Core(s) per socket:** 64
- **Socket(s):** 2
- **NUMA node(s):** 16
- **Vendor ID:** AuthenticAMD
- **CPU family:** 25
- **Model:** 1
- **Model name:** AMD EPYC 7763 64-Core Processor
- **Stepping:** 1
- **CPU MHz:** 1673.044
- **BogoMIPS:** 4890.71
- **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
- **NUMA node8 CPU(s):** 64-71
- **NUMA node9 CPU(s):** 72-79
- **NUMA node10 CPU(s):** 80-87
- **NUMA node11 CPU(s):** 88-95
- **NUMA node12 CPU(s):** 96-103
- **NUMA node13 CPU(s):** 104-111
- **NUMA node14 CPU(s):** 112-119
- **NUMA node15 CPU(s):** 120-127

**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

(Continued on next page)
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</tbody>
</table>

Dell Inc.
PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)

### Platform Notes (Continued)

- monitor ssse3 fma cx16 pclid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c
- rcrand lalh lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnoprefetch
- osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb
- cat_l3 cdp_l3 invpcid_single hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall
- fsqsbases 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 irperf xsaveerptr wbnoinvd amd_ppin arat npt lbrv svm_lock
- nrip_save tsc_scale vmcb_clean flushbyaid decodeassists pausefilter pfthreshold
- v_vmsave_vmload vgic umip pku 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.

<table>
<thead>
<tr>
<th>Available</th>
<th>Nodes</th>
<th>(0-15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node 0 cpus:</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Node 0 size:</td>
<td>128 KB</td>
<td></td>
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<tr>
<td>Node 0 free:</td>
<td>128 KB</td>
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</tr>
<tr>
<td>Node 1 cpus:</td>
<td>8 9 10 11 12 13 14 15</td>
<td></td>
</tr>
<tr>
<td>Node 1 size:</td>
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<td></td>
</tr>
<tr>
<td>Node 1 free:</td>
<td>129 KB</td>
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<tr>
<td>Node 2 cpus:</td>
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<td>Node 2 size:</td>
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</tr>
<tr>
<td>Node 2 free:</td>
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<tr>
<td>Node 3 cpus:</td>
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<tr>
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</tr>
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<tr>
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<td></td>
</tr>
<tr>
<td>Node 10 cpus:</td>
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</tr>
</tbody>
</table>

(Continued on next page)
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CPU2017 License: 55  
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Platform Notes (Continued)

node 10 size: 129019 MB  
node 10 free: 128935 MB  
node 11 cpus: 88 89 90 91 92 93 94 95  
node 11 size: 128984 MB  
node 11 free: 128897 MB  
node 12 cpus: 96 97 98 99 100 101 102 103  
node 12 size: 129021 MB  
node 12 free: 128805 MB  
node 13 cpus: 104 105 106 107 108 109 110 111  
node 13 size: 129021 MB  
node 13 free: 128923 MB  
node 14 cpus: 112 113 114 115 116 117 118 119  
node 14 size: 129021 MB  
node 14 free: 128689 MB  
node 15 cpus: 120 121 122 123 124 125 126 127  
node 15 size: 129013 MB  
node 15 free: 128750 MB  
node distances:

From /proc/meminfo
MemTotal: 2101000492 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)
Dell Inc.

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SPEC CPU®2017 Integer Speed Result

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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.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): 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 May 19 06:19

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.7-aocc300-B2
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 128G 4.0G 125G 4% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R6525
Product Family: PowerEdge
Serial: C3JVPX2

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow

(Continued on next page)
Dell Inc.
PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)

SPECspeed®2017_int_base = 12.0
SPECspeed®2017_int_peak = 12.0

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

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:
    16x 802C8632802C 72ASS16G72LZ-3G2B3 128 GB 4 rank 3200
    16x Not Specified Not Specified

BIOS:
    BIOS Vendor: Dell Inc.
    BIOS Version: 2.2.5
    BIOS Date: 04/08/2021
    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.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
==============================================================================

(Continued on next page)
Dell Inc.

PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)

SPECspeed®2017_int_base = 12.0
SPECspeed®2017_int_peak = 12.0

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

Compiler Version Notes (Continued)

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.oomnetpp_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-lcvm-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 -flto -fstruct-layout=5
-mlllvm -unroll-threshold=50 -mlllvm -inline-threshold=1000
-fremap-arrays -mlllvm -function-specialize -flv-function-specialization
-mlllvm -enable-gvn-hoist -mlllvm -global-vectorize-slp=true
-mlllvm -enable-lcvm-vrp -mlllvm -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lflang -lflangrti

(Continued on next page)
## Dell Inc.

**PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)**

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**SPEC CPU®2017 Integer Speed Result**

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
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</table>

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

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### Base Optimization Flags (Continued)

**C++ benchmarks:**

- m64 -std=c++98 -mno-adx -mno-sse4a
- W1, -mllvm -W1,-do-block-reorder=aggressive
- W1, -mllvm -W1,-region-vectorize -W1,-mllvm -W1,-function-specialize
- W1, -mllvm -W1,-align-all-nofallthru-blocks=6
- W1, -mllvm -W1,-reduce-array-computations=3 -O3 -march=znver3
- fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch
- mllvm -unroll-threshold=100 -finline-aggressive
- fvlv-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 -W1,-mllvm -W1,-inline-recursion=4
- W1, -mllvm -W1,-lsr-in-nested-loop -W1,-mllvm -W1,-enable-iv-split
- W1, -mllvm -W1,-region-vectorize -W1,-mllvm -W1,-function-specialize
- W1, -mllvm -W1,-align-all-nofallthru-blocks=6
- W1, -mllvm -W1,-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 7763 64-Core Processor)

| SPECspeed®2017_int_base = 12.0 |
| SPECspeed®2017_int_peak = 12.0 |

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

Test Date: May-2021
Hardware Availability: Mar-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,-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 -lflang

602.gcc_s: Same as 600.perlbench_s

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: basepeak = yes

C++ benchmarks:

(Continued on next page)
Dell Inc.

PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)

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

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

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### Peak Optimization Flags (Continued)

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-slp=true
   -mllvm -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

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


# SPEC CPU®2017 Integer Speed Result

**Dell Inc.**  
**PowerEdge R6525 (AMD EPYC 7763 64-Core Processor)**  

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

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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