### Dell Inc.

PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)

| SPECspeed\textsuperscript{\textregistered}2017\_int\_base | 11.8 |
| SPECspeed\textsuperscript{\textregistered}2017\_int\_peak | 11.8 |

Dell Inc.  

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

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<table>
<thead>
<tr>
<th>SPECspeed\textsuperscript{\textregistered}2017_int_peak (11.8)</th>
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</thead>
</table>

#### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed\textsuperscript{\textregistered}2017_int_base</th>
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<td>128</td>
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<tr>
<td>620.omnetpp_s</td>
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<tr>
<td>623.xalancbmk_s</td>
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<td>625.x264_s</td>
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<td>631.deepsjeng_s</td>
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<tr>
<td>641.leela_s</td>
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</tr>
<tr>
<td>648.exchange2_s</td>
<td>128</td>
<td>22.4</td>
<td>22.4</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>128</td>
<td>24.4</td>
<td>24.4</td>
</tr>
</tbody>
</table>

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### 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:** 1002 GB on tmpfs  
**Other:** None

---

### Software

**OS:** Red Hat Enterprise Linux 8.3 (Ootpa)  
**Compiler:** C/C++/Fortran: Version 3.0.0 of AOCC  
**Parallel:** Yes  
**Firmware:** Version 2.1.4 released Feb-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>
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<th>Seconds</th>
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**SPECspeed®2017_int_base = 11.8**

**SPECspeed®2017_int_peak = 11.8**

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.**

**PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)**

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**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
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**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 =  
"/dev/shm/cpu2017-1.1.5/amd_speed_aocc300_milan_B_lib/64;/dev/shm/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 = "128"

Environment variables set by runcpu during the 600.perlbench_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 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  
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)
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**PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)**

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

### General Notes (Continued)

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 1002 GB ramdisk created with the cmd: "mount -t tmpfs -o size=1002G 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 /dev/shm/cpu2017-1.1.5/bin/sysinfo**
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Thu Mar  4 09:46:19 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](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
      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
    - 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 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:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian

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**Platform Notes (Continued)**

- **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:** 1794.360
- **BogoMIPS:** 4890.35
- **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 vmx 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
rdrdnop lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topopt perfctr_core perfctr_nb perfctr_llc mwaitx cpb
cat_l1 cdp_l1 invpcid_single hw_pstate sme ssbd mba sev ibrs ibp stibp vmmcall
fsgsbase bmi1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb
sha ni xsaveopt xsaves xgetbv1 xsavees cqm_llc cqm_occup_llc cqm_mbb_total
cqm_mbb_local clzero irperf xsaveerptr wbnoinvd amd_pfn arat npt lbv svm_lock
nrip_save tsc_scale vmcb_clean flushbyasid decodeassist paflush pfthreshold
v_vmsave_vmload vgif umip pku ospk vaes vpclmulqdq rdpid overflow_recover succor smca

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Platform Notes (Continued)

/proc/cpuinfo cache data
  cache size : 512 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
  physical chip.
  available: 16 nodes (0-15)
  node 0 cpus: 0 1 2 3 4 5 6 7
  node 0 size: 128586 MB
  node 0 free: 128478 MB
  node 1 cpus: 8 9 10 11 12 13 14 15
  node 1 size: 129021 MB
  node 1 free: 128965 MB
  node 2 cpus: 16 17 18 19 20 21 22 23
  node 2 size: 129021 MB
  node 2 free: 128958 MB
  node 3 cpus: 24 25 26 27 28 29 30 31
  node 3 size: 129021 MB
  node 3 free: 128949 MB
  node 4 cpus: 32 33 34 35 36 37 38 39
  node 4 size: 129021 MB
  node 4 free: 128949 MB
  node 5 cpus: 40 41 42 43 44 45 46 47
  node 5 size: 129021 MB
  node 5 free: 128964 MB
  node 6 cpus: 48 49 50 51 52 53 54 55
  node 6 size: 129021 MB
  node 6 free: 128956 MB
  node 7 cpus: 56 57 58 59 60 61 62 63
  node 7 size: 116907 MB
  node 7 free: 116850 MB
  node 8 cpus: 64 65 66 67 68 69 70 71
  node 8 size: 129021 MB
  node 8 free: 128758 MB
  node 9 cpus: 72 73 74 75 76 77 78 79
  node 9 size: 129021 MB
  node 9 free: 126476 MB
  node 10 cpus: 80 81 82 83 84 85 86 87
  node 10 size: 129019 MB
  node 10 free: 128956 MB
  node 11 cpus: 88 89 90 91 92 93 94 95
  node 11 size: 129019 MB
  node 11 free: 128829 MB
  node 12 cpus: 96 97 98 99 100 101 102 103
  node 12 size: 129021 MB
  node 12 free: 128719 MB
  node 13 cpus: 104 105 106 107 108 109 110 111
  node 13 size: 128978 MB

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

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Platform Notes (Continued)

node 13 free: 128816 MB
node 14 cpus: 112 113 114 115 116 117 118 119
node 14 size: 129021 MB
node 14 free: 127634 MB
node 15 cpus: 120 121 122 123 124 125 126 127
node 15 size: 129015 MB
node 15 free: 127034 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
8: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
9: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
10: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
11: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
12: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
13: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
14: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32
15: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32

From /proc/meminfo
MemTotal: 2101000196 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
/sbin/tuned-adm active
Current active profile: throughput-performance

From /etc/*release* /etc/*version*

os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID=rhel
ID_LIKE="fedora"
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

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**Platform Notes (Continued)**

```
uname -a:
    Linux localhost.localdomain 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 sanitation
CVE-2017-5753 (Spectre variant 1): Mitigation: Full AMD retpoline, IBFB: conditional, IBRS_FW, STIBP: 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 Nov 28 04:26

SPEC is set to: /dev/shm/cpu2017-1.1.5
  Filesystem    Type     Size  Used  Avail Use% Mounted on
  tmpfs          tmpfs  1002G  5.7G   997G   1% /dev/shm

From /sys/devices/virtual/dmi/id
  Vendor:         Dell Inc.
  Product:        PowerEdge C6525
  Product Family: PowerEdge

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.
Memory:
  16x 802C8632802C 72ASS16G72LZ-3G2B3 128 GB 4 rank 3200

BIOS:
  BIOS Vendor:   Dell Inc.
  BIOS Version:  2.1.4
  BIOS Date:     02/17/2021
  BIOS Revision: 2.1
```

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

**Platform Notes (Continued)**  

(End of data from sysinfo program)

**Compiler Version Notes**

C

<table>
<thead>
<tr>
<th>600.perlbench_s(base, peak)</th>
<th>602.gcc_s(base, peak)</th>
<th>605.mcf_s(base, peak)</th>
<th>625.x264_s(base, peak)</th>
<th>657.xz_s(base, peak)</th>
</tr>
</thead>
</table>

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++

<table>
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<tr>
<th>620.omnetpp_s(base, peak)</th>
<th>623.xalancbmk_s(base, peak)</th>
<th>631.deepsjeng_s(base, peak)</th>
<th>641.leela_s(base, peak)</th>
</tr>
</thead>
</table>

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

<table>
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<tr>
<th>648.exchange2_s(base, peak)</th>
</tr>
</thead>
</table>

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

**Base Compiler Invocation**

C benchmarks:  
clang

C++ benchmarks:  
clang++

(Continued on next page)
Dell Inc.  
PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)  

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**Software Availability:** Mar-2021

---

**Base Compiler Invocation (Continued)**

**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 -W1,-allow-multiple-definition  
-W1,-mllvm -W1,-enable-licm-vrp -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 -fstruct-layout=5  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-fremap-arrays -mllvm -function-specialize -flv-function-specialization  
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true  
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3 -z muldefs  
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc  
-lflang -lflangrti  

**C++ benchmarks:**  
-m64 -std=c++98 -mno-adx -mno-sse4a  
-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  
-flv-function-specialization -mllvm -loop-unswitch-threshold=200000  
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch

(Continued on next page)
Dell Inc.

PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)

SPEC CPU®2017 Integer Speed Result

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Dell Inc.

SPECspeed®2017_int_base = 11.8

SPECspeed®2017_int_peak = 11.8

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

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

Base Optimization Flags (Continued)

C++ benchmarks (continued):
-mlir -extra-vectorizer-passes -mlir -reduce-array-computations=3
-mlir -global-vectorize-slp=true -mlir -convert-pow-exp-to-int=false
-z muldefs -mlir -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-llflangdrti

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl,-lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mlir -unroll-aggressive -mlir -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-llflangdrti

Base Other Flags

C benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

C++ benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

Fortran benchmarks:
-Wno-return-type

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang
## SPEC CPU®2017 Integer Speed Result

**SPEC®2017_int_base = 11.8**  
**SPECspeed®2017_int_peak = 11.8**

### Dell Inc.  
**PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)**

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### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

**C benchmarks:**

```plaintext
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
```

### (Continued on next page)
## Dell Inc. PowerEdge C6525 (AMD EPYC 7763 64-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>11.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_int_peak</td>
<td>11.8</td>
</tr>
</tbody>
</table>

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### Peak Optimization Flags (Continued)

- 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

**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


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


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Tested with SPEC CPU®2017 v1.1.5 on 2021-03-04 10:46:19-0500.  
Originally published on 2021-05-25.