Dell Inc.

PowerEdge R7525 (AMD EPYC 7713 64-Core Processor) Dell Inc.

SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

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

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

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

Threads

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base (12.4)</th>
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<tbody>
<tr>
<td>600.perlbench_s 1 7.22</td>
<td>13.3 20.7</td>
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<tr>
<td>602.gcc_s 1 13.4 20.8</td>
<td>13.9 20.8</td>
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<tr>
<td>605.mcf_s 1 8.30</td>
<td>8.30 14.1</td>
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<tr>
<td>620.omnetpp_s 1 8.22</td>
<td>8.22 17.2</td>
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<tr>
<td>623.xalancbmk_s 1 13.9</td>
<td>13.9 17.2</td>
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<tr>
<td>625.x264_s 1 6.30</td>
<td>6.30 17.2</td>
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<tr>
<td>631.deepsjeng_s 1 6.31</td>
<td>6.31 17.2</td>
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<tr>
<td>641.leela_s 1 5.84</td>
<td>5.84 17.2</td>
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<tr>
<td>648.exchange2_s 1 23.5</td>
<td>23.5 23.6</td>
</tr>
<tr>
<td>657.xz_s 1 24.7</td>
<td>24.7 24.8</td>
</tr>
</tbody>
</table>

Hardware

CPU Name: AMD EPYC 7713
Max MHz: 3675
Nominal: 2000
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: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R)
Storage: 225 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 2.0.3 released Jan-2021
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc: jemalloc memory allocator library v5.1.0
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.
# SPEC CPU®2017 Integer Speed Result

## Dell Inc.

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CPU2017 License: 55  
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## Results Table

<table>
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<tr>
<th>Benchmark</th>
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<td>648.exchange2_s</td>
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<td>249</td>
<td>24.8</td>
<td>249</td>
<td>24.8</td>
</tr>
</tbody>
</table>

## 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  
'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)
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**SPECspeed®2017_int_base = 12.4**

**SPECspeed®2017_int_peak = 12.4**

---

### 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/cpu2017-1.1.5/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 = "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 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"

Environment variables set by runcpu during the 657.xz_s peak run:

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

Dell Inc.

PowerEdge R7525 (AMD EPYC 7713 64-Core Processor)

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

Environment Variables Notes (Continued)

GOMP_CPU_AFFINITY = "0-127"

General Notes

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

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

Benchmark run from a 225 GB ramdisk created with the cmd: "mount -t tmpfs -o size=225G tmpfs /mnt/ramdisk
ejemalloc: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)
ejemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2

Platform Notes

BIOS settings:
Logical processor : Disabled
L3 Cache as NUMA Domain : Enabled
Virtualization Technology : Disabled
DRAM Refresh Delay : Performance
System Profile : Custom
CPU Power Management : Maximum Performance
Memory Patrol Scrub : Disabled
PCI ASPM L1 Link : Disabled
Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.5/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Mon Mar  1 16:33:48 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 7713 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.)

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

#### Platform Notes (Continued)

```plaintext
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
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 7713 64-Core Processor
Stepping: 0
CPU MHz: 3284.827
BogoMIPS: 3992.62
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
```

(Continued on next page)
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SPECspeed®2017_int_peak = 12.4 
SPECspeed®2017_int_base = 12.4 

Platform Notes (Continued)

Flags: 

fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov 
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm 
constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf pni pclmulqdq 
monitor ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c 
rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch 
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpxext perfctr_llc mwaitx cpb 
cat_13 cd8_13 invpcid_single hw_pstate sme ssbd mba sev ibrs ibpb stibp vmmcall 
fsqsb vmla avx2 smep bmi2 invpcid cmp rdt_a rdseed adx smap clflushopt clwb 
sha ni xsaveopt xsaveopt xgetbv1 xsaves cmq_llc cmq_occup_llc cmq_mbb_total 
cmq_mbb_local clzero irperf xsaveerptr wnboinvd amd_ppin arat npt lbrv svm_lock 
nrip_save tsc_scale vmbc_clean flushbyasid decodeassists pausefilter pfthreshold 
v_vmsave_vmload vgif umip pk uospe vaes vpclmulqdq rdpid overflow_recov sucors 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. 

available: 16 nodes (0-15) 
node 0 cpus: 0 1 2 3 4 5 6 7 
node 0 size: 64070 MB 
node 0 free: 63994 MB 
node 1 cpus: 8 9 10 11 12 13 14 15 
node 1 size: 64464 MB 
node 1 free: 64396 MB 
node 2 cpus: 16 17 18 19 20 21 22 23 
node 2 size: 64493 MB 
node 2 free: 64425 MB 
node 3 cpus: 24 25 26 27 28 29 30 31 
node 3 size: 64487 MB 
node 3 free: 64463 MB 
node 4 cpus: 32 33 34 35 36 37 38 39 
node 4 size: 64503 MB 
node 4 free: 64455 MB 
node 5 cpus: 40 41 42 43 44 45 46 47 
node 5 size: 64503 MB 
node 5 free: 64464 MB 
node 6 cpus: 48 49 50 51 52 53 54 55 
node 6 size: 64493 MB 
node 6 free: 64458 MB 
node 7 cpus: 56 57 58 59 60 61 62 63 
node 7 size: 64477 MB 
node 7 free: 64405 MB 
node 8 cpus: 64 65 66 67 68 69 70 71 
node 8 size: 64501 MB 
node 8 free: 60337 MB 
node 9 cpus: 72 73 74 75 76 77 78 79 

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Platform Notes (Continued)

node 9 size: 64509 MB
node 9 free: 64408 MB
node 10 cpus: 80 81 82 83 84 85 86 87
node 10 size: 64509 MB
node 10 free: 64447 MB
node 11 cpus: 88 89 90 91 92 93 94 95
node 11 size: 64507 MB
node 11 free: 64338 MB
node 12 cpus: 96 97 98 99 100 101 102 103
node 12 size: 64509 MB
node 12 free: 63554 MB
node 13 cpus: 104 105 106 107 108 110 111
node 13 size: 64503 MB
node 13 free: 64438 MB
node 14 cpus: 112 113 114 115 116 117 118 119
node 14 size: 64507 MB
node 14 free: 64342 MB
node 15 cpus: 120 121 122 123 124 125 126 127
node 15 size: 64503 MB
node 15 free: 64320 MB
node distances:

From /proc/meminfo
MemTotal: 1056422508 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
/sbin/tuned-adm active
Current active profile: throughput-performance

(Continued on next page)
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Platform Notes (Continued)

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

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): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5753 (Spectre variant 1): Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, 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 Mar 1 10:31 last=5

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

Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 225G 4.8G 221G 3% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R7525
Product Family: PowerEdge
Serial: 48LN333

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

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 80AD869D80AD HMAA8GR7AJR4N-XN 64 GB 2 rank 3200
- 16x Not Specified Not Specified

BIOS:
- BIOS Vendor: Dell Inc.
- BIOS Version: 2.0.3
- BIOS Date: 01/15/2021
- BIOS Revision: 2.0

(End of data from sysinfo program)

### Compiler Version Notes

<table>
<thead>
<tr>
<th>Language</th>
<th>Benchmark(s)</th>
</tr>
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<tbody>
<tr>
<td>C</td>
<td>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)</td>
</tr>
<tr>
<td></td>
<td>AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)</td>
</tr>
<tr>
<td></td>
<td>Target: x86_64-unknown-linux-gnu</td>
</tr>
<tr>
<td></td>
<td>Thread model: posix</td>
</tr>
<tr>
<td></td>
<td>InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin</td>
</tr>
</tbody>
</table>

| 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) |

(Continued on next page)
Dell Inc.
PowerEdge R7525 (AMD EPYC 7713 64-Core Processor)

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

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

Compiler Version Notes (Continued)

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++

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-llicm- cortical -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  
-fvclib=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

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

C benchmarks (continued):
-mlvm -enable-licm-vrp -mlvm -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-llflang -llflangrti

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

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -W1,-mlvm -W1, -inline-recursion=4
-W1,-mlvm -W1, -lsr-in-nested-loop -W1,-mlvm -W1, -enable-iv-split
-W1,-mlvm -W1, -region-vectorize -W1,-mlvm -W1, -function-specialize
-W1,-mlvm -W1, -align-all-nofallthru-blocks=6
-W1,-mlvm -W1, -reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mlvm -unroll-aggressive -mlvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -llflang
-llflangrti

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 R7525 (AMD EPYC 7713 64-Core Processor)

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

**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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**Peak Compiler Invocation**

C benchmarks:
- clang

C++ benchmarks:
- clang++

Fortran benchmarks:
- flang

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**Peak Portability Flags**

Same as Base Portability Flags

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**Peak Optimization Flags**

C benchmarks:
- -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
- -Wl,-mllvm -Wl,-enable-licm-vrp -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
- -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3
- -fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
- -mllvm -unroll-threshold=50 -fremap-arrays -flv-function-specialization
- -mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
- -mllvm -global-vectorize-slp=true -mllvm -function-specialize
- -mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
- -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

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

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SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge R7525 (AMD EPYC 7713 64-Core Processor)

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<th>SPECspeed®2017_int_base</th>
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<td>12.4</td>
</tr>
</tbody>
</table>

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

Peak Optimization Flags (Continued)

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4
-Wl,-mllvm -Wl, -lsr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split
-Wl,-mllvm -Wl, -function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -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

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 2021-03-01 17:33:48-0500.
Report generated on 2021-03-30 17:11:25 by CPU2017 PDF formatter v6442.
Originally published on 2021-03-30.