



SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

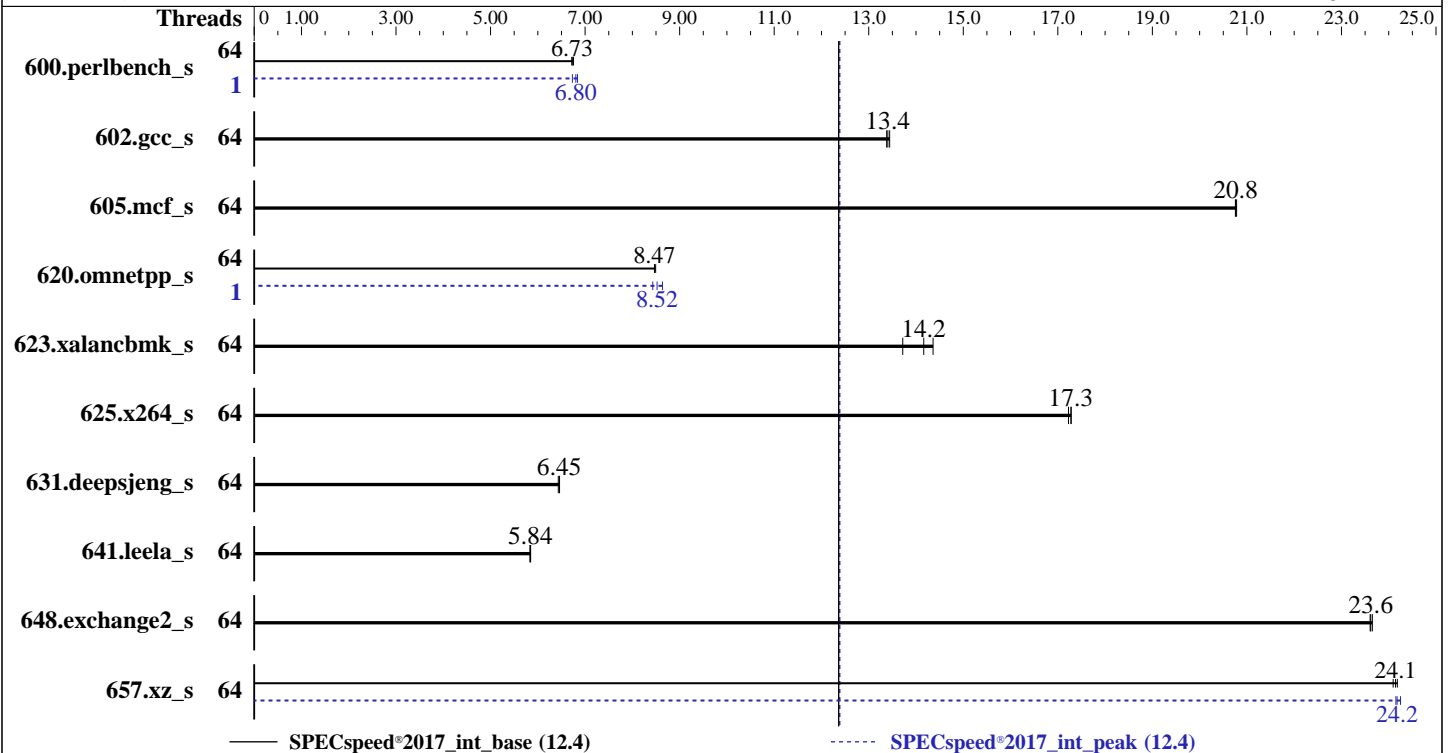
ProLiant DL345 Gen10 Plus
(2.00 GHz, AMD EPYC 7713P)

SPECspeed®2017_int_base = 12.4

SPECspeed®2017_int_peak = 12.4

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Sep-2021
Hardware Availability: Jun-2021
Software Availability: Aug-2021



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: 1 x 480 GB SAS SSD, RAID 0
 Other: None

Software

OS: Ubuntu 20.04.1 LTS (x86_64)
 Kernel 5.4.0-84-generic
 Compiler: C/C++/Fortran: Version 3.0.0 of AOCC
 Parallel: Yes
 Firmware: HPE BIOS Version A43 v2.52 08/24/2021 released Aug-2021
 File System: ext4
 System State: Run level 5 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc: jemalloc memory allocator library v5.1.0
 Power Management: BIOS set to prefer performance at the cost of additional power usage



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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	64	263	6.76	264	6.72	264	6.73	1	264	6.73	261	6.80	260	6.84
602.gcc_s	64	296	13.4	297	13.4	298	13.4	64	296	13.4	297	13.4	298	13.4
605.mcf_s	64	227	20.8	227	20.8	227	20.8	64	227	20.8	227	20.8	227	20.8
620.omnetpp_s	64	192	8.49	193	8.47	193	8.47	1	193	8.43	189	8.64	191	8.52
623.xalancbmk_s	64	100	14.2	103	13.7	98.7	14.4	64	100	14.2	103	13.7	98.7	14.4
625.x264_s	64	102	17.3	102	17.2	102	17.3	64	102	17.3	102	17.2	102	17.3
631.deepsjeng_s	64	223	6.43	222	6.45	222	6.46	64	223	6.43	222	6.45	222	6.46
641.leela_s	64	293	5.83	292	5.84	292	5.85	64	293	5.83	292	5.84	292	5.85
648.exchange2_s	64	124	23.7	124	23.6	125	23.6	64	124	23.7	124	23.6	125	23.6
657.xz_s	64	257	24.1	256	24.1	256	24.2	64	255	24.2	256	24.2	256	24.2

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.

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.
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root to enable
```

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Operating System Notes (Continued)

Transparent Hugepages (THP) for this run.
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root for peak runs of 628.pop2_s and 638.imagick_s to enable THP only on request.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-63"
LD_LIBRARY_PATH =
"/home/cpu2017/amd_speed_aocc300_milan_B_lib/lib;/home/cpu2017/amd_speed_aocc300_milan_B_lib/lib32:"
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 620.omnetpp_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

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.

jemalloc: configured and built with GCC v4.8.2 in RHEL 7.4
jemalloc 5.1.0 is available here:
<https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2>



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Platform Notes

BIOS Configuration
Workload Profile set to General Peak Frequency Compute
AMD SMT Option set to Disabled
Determinism Control set to Manual
Performance Determinism set to Power Deterministic
Last-Level Cache (LLC) as NUMA Node set to Enabled
NUMA memory domains per socket set to One memory domain per socket
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom
Infinity Fabric Power Management set to Disabled
Infinity Fabric Performance State set to P0
Power Regulator set to OS Control Mode

sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on admin1 Wed Sep 15 07:15:20 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 from util-linux 2.34:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 48 bits physical, 48 bits virtual
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

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Platform Notes (Continued)

```

Model name: AMD EPYC 7713P 64-Core Processor
Stepping: 1
Frequency boost: enabled
CPU MHz: 1470.220
CPU max MHz: 2000.0000
CPU min MHz: 1500.0000
BogoMIPS: 3992.57
Virtualization: AMD-V
L1d cache: 2 MiB
L1i cache: 2 MiB
L2 cache: 32 MiB
L3 cache: 256 MiB
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
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Full AMD retpoline, IBPB conditional, IBRS_FW, STIBP disabled, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr 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 movbe popcnt aes xsave avx fl6c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba 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 irperf xsaveerptr wbnoinvd arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter pfthreshold v_vmsave_vmload vgif umip pku ospke vaes vpclmulqdq rdpid overflow_recov succor smca

```

From `lscpu --cache:`
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL

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Platform Notes (Continued)

L1d	32K	2M	8 Data	1
L1i	32K	2M	8 Instruction	1
L2	512K	32M	8 Unified	2
L3	32M	256M	16 Unified	3

```
/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: 8 nodes (0-7)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 128776 MB
node 0 free: 128606 MB
node 1 cpus: 8 9 10 11 12 13 14 15
node 1 size: 129022 MB
node 1 free: 128880 MB
node 2 cpus: 16 17 18 19 20 21 22 23
node 2 size: 129022 MB
node 2 free: 128890 MB
node 3 cpus: 24 25 26 27 28 29 30 31
node 3 size: 129022 MB
node 3 free: 128895 MB
node 4 cpus: 32 33 34 35 36 37 38 39
node 4 size: 129022 MB
node 4 free: 128793 MB
node 5 cpus: 40 41 42 43 44 45 46 47
node 5 size: 128997 MB
node 5 free: 128745 MB
node 6 cpus: 48 49 50 51 52 53 54 55
node 6 size: 129022 MB
node 6 free: 128774 MB
node 7 cpus: 56 57 58 59 60 61 62 63
node 7 size: 116908 MB
node 7 free: 116763 MB
```

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

```
From /proc/meminfo
```

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Platform Notes (Continued)

MemTotal: 1044267872 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

```
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has  
ondemand
```

```
/usr/bin/lsb_release -d  
Ubuntu 20.04.1 LTS
```

```
From /etc/*release* /etc/*version*  
debian_version: bullseye/sid  
os-release:  
NAME="Ubuntu"  
VERSION="20.04.1 LTS (Focal Fossa)"  
ID=ubuntu  
ID_LIKE=debian  
PRETTY_NAME="Ubuntu 20.04.1 LTS"  
VERSION_ID="20.04"  
HOME_URL="https://www.ubuntu.com/"  
SUPPORT_URL="https://help.ubuntu.com/"
```

```
uname -a:  
Linux admin1 5.4.0-84-generic #94-Ubuntu SMP Thu Aug 26 20:27:37 UTC 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  
sanitization  
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 5 Sep 15 05:55
```

```
SPEC is set to: /home/cpu2017
```

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Platform Notes (Continued)

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/ubuntu--vg-ubuntu--lv	ext4	196G	17G	170G	9%	/

```

From /sys/devices/virtual/dmi/id
Vendor:          HPE
Product:         ProLiant DL345 Gen10 Plus
Product Family: ProLiant
Serial:          J20APP000K

```

Additional information from dmidecode 3.2 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:
  8x Samsung M386AAG40AM3-CWE 128 GB 4 rank 3200
  8x UNKNOWN NOT AVAILABLE

```

```

BIOS:
  BIOS Vendor:      HPE
  BIOS Version:     A43
  BIOS Date:        08/24/2021
  BIOS Revision:    2.52
  Firmware Revision: 2.55

```

(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

```

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Compiler Version Notes (Continued)

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

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



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Base Optimization Flags

C benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp -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 -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-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
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-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 -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
-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 -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
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang
-lflangrti
```



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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

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
-freemap-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
```

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SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL345 Gen10 Plus
(2.00 GHz, AMD EPYC 7713P)

SPECspeed®2017_int_base = 12.4

SPECspeed®2017_int_peak = 12.4

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Sep-2021
Hardware Availability: Jun-2021
Software Availability: Aug-2021

Peak Optimization Flags (Continued)

600.perlbench_s (continued):

-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: basepeak = yes

605.mcf_s: basepeak = yes

625.x264_s: basepeak = yes

657.xz_s: Same as 600.perlbench_s

C++ benchmarks:

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 -fvvisibility=hidden

-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm

-ljemalloc -lflang

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

Peak Other Flags

C benchmarks:

-Wno-unused-command-line-argument -Wno-return-type

(Continued on next page)



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Peak Other Flags (Continued)

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

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revQ.html>

<http://www.spec.org/cpu2017/flags/aocc300-flags-B2.html>

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

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revQ.xml>

<http://www.spec.org/cpu2017/flags/aocc300-flags-B2.xml>

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