Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL325 Gen10 Plus v2  
(2.60 GHz, AMD EPYC 7513)  

| SPECspeed®2017_int_base = 12.3 | SPECspeed®2017_int_peak = 12.3 |

Threads  
0 1.00 3.00 5.00 7.00 9.00 11.00 13.00 15.00 17.00 19.00 21.00 23.00 24.00  
600.perlbhit_s 32 6.57 6.94 13.3  
602.gcc_s 32 8.53 8.59 20.6  
605.mcf_s 32 6.44 14.1  
620.omnetpp_s 32 5.79 5.93 17.2  
623.xalancbmk_s 32 6.44  
625.x264_s 32 5.79 5.93  
631.deepsjeng_s 32 6.44  
641.leela_s 32 5.79 5.93  
648.exchange2_s 32 6.44  
657.xz_s 32 5.79 5.93  

--- SPECspeed®2017_int_base (12.3)  
--- SPECspeed®2017_int_peak (12.3)  

**Hardware**  
CPU Name: AMD EPYC 7513  
Max MHz: 3650  
Nominal: 2600  
Enabled: 32 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: 128 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 800 GB SAS SSD, RAID 0  
Other: None  

**Software**  
OS: Ubuntu 20.04.1 LTS (x86_64)  
Kernel 5.4.0-54-generic  
Compiler: C/C++/Fortran: Version 3.0.0 of AOCC  
Parallel: Yes  
Firmware: HPE BIOS Version A43 v2.40 02/15/2021 released Mar-2021  
File System: ext4  
System State: Run level 5 (multi-user, GUI disabled)  
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
## 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>Base</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Threads</th>
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<td>600.perlbens_s</td>
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<td>269</td>
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<td>270</td>
<td>6.57</td>
<td>271</td>
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<tr>
<td>631.deepsjeng_s</td>
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<tr>
<td>641.leela_s</td>
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<td>5.78</td>
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<tr>
<td>648.exchange2_s</td>
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<tr>
<td>657.xz_s</td>
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<td>23.8</td>
<td>262</td>
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</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 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.

The real test date is Apr-2021. The clock was mistakenly set to 2020 before the benchmark was run.

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

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.60 GHz, AMD EPYC 7513)

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

Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECspeed®2017_int_base = 12.3
SPECspeed®2017_int_peak = 12.3

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.
To enable THP only on request for peak runs of 628.pop2_s, and 638.imagick_s,
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root.
To disable THP for peak runs of 627.cam4_s, 644.nab_s, 649.fotonik3d_s, and 654.roms_s,
'echo never > /sys/kernel/mm/transparent_hugepage/enabled' run as root.

Environment Variables Notes
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH = 
   "/cpu2017/amd_speed_aocc300_milan_B_lib/64;/cpu2017/amd_speed_aocc300_milan_B_lib/32:
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "32"

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"

General Notes
Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 512GiB 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.

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
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.60 GHz, AMD EPYC 7513)

SPECspeed®2017_int_base = 12.3
SPECspeed®2017_int_peak = 12.3

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

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

Platform Notes

BIOS Configuration
Workload Profile set to General Throughput 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
Memory PStates set to Disabled
Data Fabric C-State Enable set to Force Enabled
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
L1 HW Prefetcher set to Disabled

Sysinfo program /cpu2017/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on dl325gen10plus Wed Apr  1 17:33:39 2020

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 7513 32-Core Processor
  1 "physical id"s (chips)
  32 "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 : 32
  siblings : 32
  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

From lscpu:
  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): 32
  On-line CPU(s) list: 0-31
  Thread(s) per core: 1
  Core(s) per socket: 32
  Socket(s): 1
  NUMA node(s): 4
  Vendor ID: AuthenticAMD
  CPU family: 25
  Model: 1

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

<table>
<thead>
<tr>
<th>Model name:</th>
<th>AMD EPYC 7513 32-Core Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stepping:</td>
<td>1</td>
</tr>
<tr>
<td>Frequency boost:</td>
<td>enabled</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>1790.059</td>
</tr>
<tr>
<td>CPU max MHz:</td>
<td>2600.00000</td>
</tr>
<tr>
<td>CPU min MHz:</td>
<td>1500.00000</td>
</tr>
<tr>
<td>BogoMIPS:</td>
<td>5190.50</td>
</tr>
<tr>
<td>Virtualization:</td>
<td>AMD-V</td>
</tr>
<tr>
<td>L1d cache:</td>
<td>1 MiB</td>
</tr>
<tr>
<td>L1i cache:</td>
<td>1 MiB</td>
</tr>
<tr>
<td>L2 cache:</td>
<td>16 MiB</td>
</tr>
<tr>
<td>L3 cache:</td>
<td>128 MiB</td>
</tr>
<tr>
<td>NUMA node0 CPU(s):</td>
<td>0-7</td>
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<td>NUMA node1 CPU(s):</td>
<td>8-15</td>
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<tr>
<td>NUMA node2 CPU(s):</td>
<td>16-23</td>
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<td>NUMA node3 CPU(s):</td>
<td>24-31</td>
</tr>
<tr>
<td>Vulnerability Itlb multihit:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Vulnerability L1tf:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Vulnerability Mds:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Vulnerability Meltdown:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Vulnerability Spec store bypass:</td>
<td>Mitigation; Speculative Store Bypass disabled via prctl and seccomp</td>
</tr>
<tr>
<td>Vulnerability Spectre v1:</td>
<td>Mitigation; usercopy/swapgs barriers and __user pointer sanitization</td>
</tr>
<tr>
<td>Vulnerability Spectre v2:</td>
<td>Mitigation; Full AMD retpoline, IBPB conditional, IBRS_FW, STIBP disabled, RSB filling</td>
</tr>
<tr>
<td>Vulnerability Srbd:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Vulnerability Tsx async abort:</td>
<td>Not affected</td>
</tr>
<tr>
<td>Flags:</td>
<td>fpu vme de pse tsc msr pae mce cx8 acpi sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpsee lgdt_lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf npi pclmulqdq monitor ssse3 fma cx16 pclid sse4_1 sse4_2 movbe popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3nowprefetch osvw ibs skincl 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 fsqsbse bni1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha ni xsaveopt xsavec xgetbv1 xsaves cmqm_llc cmqm_occup_llc cmqm_mbb_total cmqm_mbb_local clzero irperf xsaveerptr wbnoinvd arat npt lbv svm_lock nrip_save tsc_scale vmbc_clean flushbyaid decodeassist pfthreshold pfthreadhold v_vm save_vmload vgif umip pku ospke vaes vpclmulqdq rdpid overflow_recov succor smca</td>
</tr>
</tbody>
</table>

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 4 nodes (0-3)
Platform Notes (Continued)

node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 257775 MB
node 0 free: 257543 MB
node 1 cpus: 8 9 10 11 12 13 14 15
node 1 size: 258046 MB
node 1 free: 257741 MB
node 2 cpus: 16 17 18 19 20 21 22 23
node 2 size: 258046 MB
node 2 free: 257756 MB
node 3 cpus: 24 25 26 27 28 29 30 31
node 3 size: 245934 MB
node 3 free: 245511 MB
node distances:
node 0 1 2 3
0: 10 11 11 11
1: 11 10 11 11
2: 11 11 10 11
3: 11 11 11 10

From /proc/meminfo
MemTotal: 1044277468 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

/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 dl325gen10plus 5.4.0-54-generic #60-Ubuntu SMP Fri Nov 6 10:37:59 UTC 2020
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

(Continued on next page)
Platform Notes (Continued)

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-2017-5715 (Spectre variant 2):
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 5 Apr 1 17:23
SPEC is set to: /cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdb2 ext4 733G 24G 672G 4% /

From /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL325 Gen10 Plus
Product Family: ProLiant
Serial: CN79290FKQ

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:
8x UNKNOWN M386AAG40AM3-CWE 128 GB 4 rank 3200
8x UNKNOWN NOT AVAILABLE

BIOS:
BIOS Vendor: HPE
BIOS Version: A43
BIOS Date: 02/15/2021
BIOS Revision: 2.40
Firmware Revision: 2.40

(End of data from sysinfo program)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.60 GHz, AMD EPYC 7513)

SPECspeed\textsuperscript{\textregistered}2017\textsubscript{int}_\text{base} = 12.3
SPECspeed\textsuperscript{\textregistered}2017\textsubscript{int}_\text{peak} = 12.3

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

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

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
==============================================================================

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang
SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.60 GHz, AMD EPYC 7513)

SPECspeed®2017_int_base = 12.3
SPECspeed®2017_int_peak = 12.3

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,-mllvm -Wl,-enable-lcm-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
-fremap-arrays -mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-lcm-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

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SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL325 Gen10 Plus v2
(2.60 GHz, AMD EPYC 7513)

SPECspeed®2017_int_base = 12.3
SPECspeed®2017_int_peak = 12.3

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

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

Base 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,-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 -fflto -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

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-licom-vrp
- Wl, -mllvm -Wl,-function-specialize
- Wl, -mllvm -Wl,-align-all-nofallthru-blocks=6
- Wl, -mllvm -Wl,-reduce-array-computations=3 -Ofast
- march=z64v3 -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-licom-vrp
- mllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: basepeak = yes

605.mcf_s: basepeak = yes

625.x264_s: basepeak = yes

657.xz_s: basepeak = yes

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=z64v3 -fveclib=AMDLIBM -ffast-math -flto
- finline-aggressive -mllvm -unroll-threshold=100
- flv-function-specialization -mllvm -enable-licom-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

(Continued on next page)
Hewlett Packard Enterprise  
ProLiant DL325 Gen10 Plus v2  
(2.60 GHz, AMD EPYC 7513)  

SPECspeed®2017_int_base = 12.3  
SPECspeed®2017_int_peak = 12.3  

Peak Optimization Flags (Continued)

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

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-revP.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-revP.xml

SPEC CPU®2017 Integer Speed Result  
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CPU2017 License: 3  
Test Sponsor: HPE  
Tested by: HPE

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

641.leela_s: basepeak = yes
Fortran benchmarks:
648.exchange2_s: basepeak = yes

Peak Optimization Flags (Continued)

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

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