



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9684X)

SPECspeed®2017_int_base = 14.2

SPECspeed®2017_int_peak = 14.3

CPU2017 License: 001176

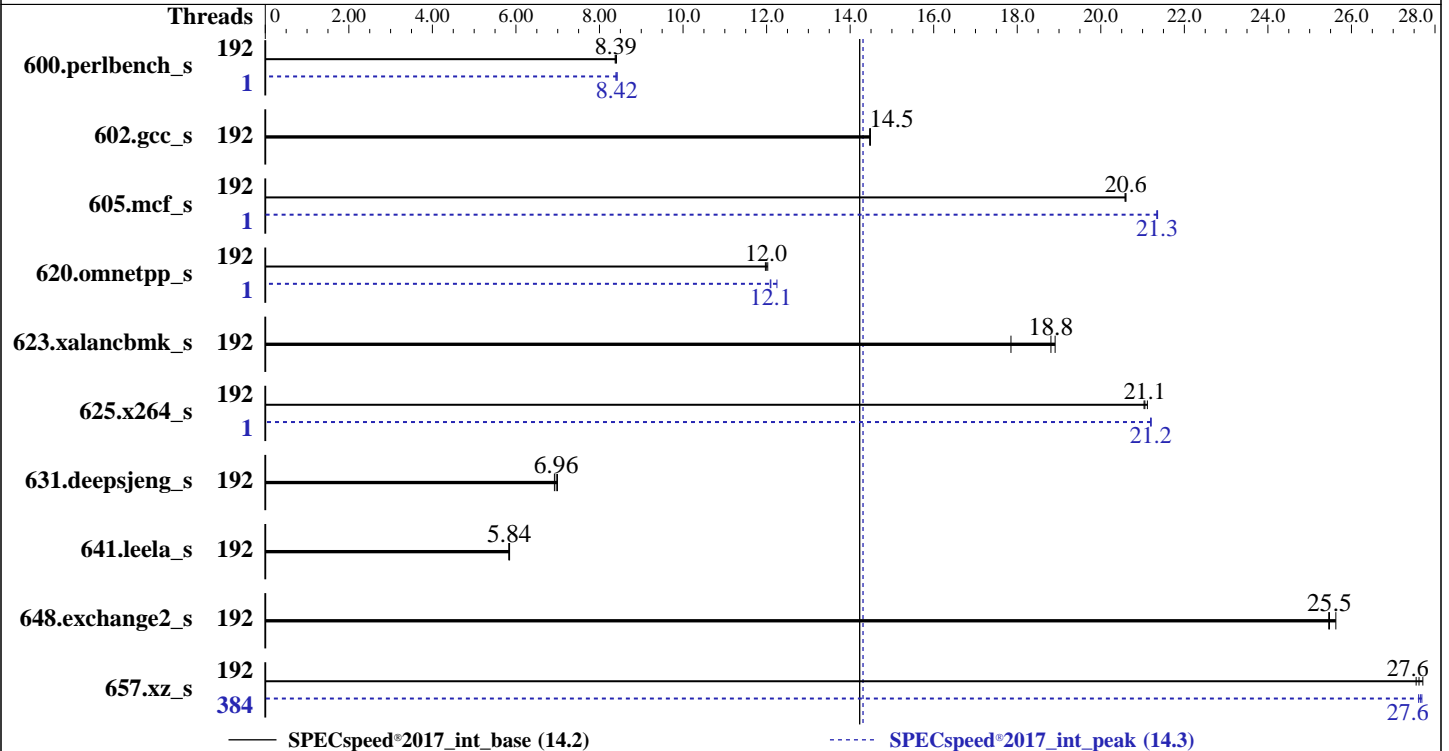
Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Aug-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022



Hardware

CPU Name: AMD EPYC 9684X
 Max MHz: 3700
 Nominal: 2550
 Enabled: 192 cores, 2 chips, 2 threads/core
 Orderable: 2 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 1152 MB I+D on chip per chip, 96 MB shared / 8 cores
 Other: None
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 960 GB NVMe SSD
 Other: None

Software

OS: Ubuntu 22.04.1 LTS
 Kernel 5.15.0-56-generic
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 1.5 released Aug-2023
 File System: ext4
 System State: Run level 5 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: None
 Power Management: BIOS and OS 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	192	<u>212</u>	<u>8.39</u>	212	8.38	211	8.41	1	211	8.42	<u>211</u>	<u>8.42</u>	211	8.39
602.gcc_s	192	<u>275</u>	<u>14.5</u>	275	14.5	275	14.5	192	<u>275</u>	<u>14.5</u>	275	14.5	275	14.5
605.mcf_s	192	229	20.6	229	20.6	<u>229</u>	<u>20.6</u>	1	221	21.4	221	21.3	<u>221</u>	<u>21.3</u>
620.omnetpp_s	192	136	12.0	136	12.0	<u>136</u>	<u>12.0</u>	1	135	12.1	<u>135</u>	<u>12.1</u>	133	12.2
623.xalancbmk_s	192	79.4	17.8	74.9	18.9	<u>75.3</u>	<u>18.8</u>	192	79.4	17.8	74.9	18.9	<u>75.3</u>	<u>18.8</u>
625.x264_s	192	<u>83.8</u>	<u>21.1</u>	83.5	21.1	83.9	21.0	1	83.2	21.2	83.2	21.2	<u>83.2</u>	<u>21.2</u>
631.deepsjeng_s	192	207	6.92	205	6.99	<u>206</u>	<u>6.96</u>	192	207	6.92	205	6.99	<u>206</u>	<u>6.96</u>
641.leela_s	192	292	5.85	<u>292</u>	<u>5.84</u>	293	5.83	192	292	5.85	<u>292</u>	<u>5.84</u>	293	5.83
648.exchange2_s	192	115	25.5	115	25.6	<u>115</u>	<u>25.5</u>	192	115	25.5	115	25.6	<u>115</u>	<u>25.5</u>
657.xz_s	192	223	27.7	<u>224</u>	<u>27.6</u>	224	27.5	384	223	27.7	224	27.6	<u>224</u>	<u>27.6</u>

SPECspeed®2017_int_base = **14.2**

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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.
'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>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run
variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

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.



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Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-383"
LD_LIBRARY_PATH = "/tim/cpu2017/amd_speed_aocc400_znver4_A_lib/lib:"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "oversize_threshold:0,retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "384"

Environment variables set by runcpu during the 600.perlbench_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 620.omnetpp_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 625.x264_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-383"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "8"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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.

Platform Notes

BIOS Settings:
NUMA Nodes Per Socket = NPS4
Determinism Control = Manual
Determinism Enable = Disable Performance Determinism
cTDP Control = Manual
cTDP = 400
Package Power Limit Control = Manual
Package Power Limit = 400

Sysinfo program /tim/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on h13dsh-9654 Fri Aug 25 09:29:45 2023

SUT (System Under Test) info as seen by some common utilities.

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Platform Notes (Continued)

```

-----
1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.6)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
-----

```

```

-----
1. uname -a
Linux h13dsh-9654 5.15.0-56-generic #62-Ubuntu SMP Tue Nov 22 19:54:14 UTC 2022 x86_64 x86_64 x86_64
GNU/Linux
-----

```

```

-----
2. w
09:29:45 up 16 min, 1 user, load average: 0.37, 0.31, 0.69
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
root      ttyl    -                09:27   33.00s 1.44s  0.34s /bin/bash ./amd_speed_aocc400_znver4_A1.sh
-----

```

```

-----
3. Username
From environment variable $USER: root
-----

```

```

-----
4. ulimit -a
time(seconds)      unlimited
file(blocks)       unlimited
data(kbytes)       unlimited
stack(kbytes)      unlimited
coredump(blocks)   0
memory(kbytes)     unlimited
locked memory(kbytes) 2097152
process            6190655
nofiles            1024
vmemory(kbytes)    unlimited
locks              unlimited
rtprio             0
-----

```

```

-----
5. sysinfo process ancestry
/sbin/init
/bin/login -p --
-bash
-----

```

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Platform Notes (Continued)

```
python3 ./run_amd_speed_aocc400_znver4_A1.py
/bin/bash ./amd_speed_aocc400_znver4_A1.sh
runcpu --config amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 3 intspeerd
runcpu --configfile amd_speed_aocc400_znver4_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeerd intspeerd --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.intspeerd.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /tim/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : AMD EPYC 9684X 96-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 17
stepping       : 2
microcode      : 0xa101207
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 3584 4K pages
cpu cores     : 96
siblings      : 192
2 physical ids (chips)
384 processors (hardware threads)
physical id 0: core ids 0-95
physical id 1: core ids 0-95
physical id 0: apicids 0-191
physical id 1: apicids 256-447
```

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.2:

```
Architecture:          x86_64
CPU op-mode(s):       32-bit, 64-bit
Address sizes:        52 bits physical, 57 bits virtual
Byte Order:           Little Endian
CPU(s):               384
On-line CPU(s) list: 0-383
Vendor ID:            AuthenticAMD
Model name:           AMD EPYC 9684X 96-Core Processor
CPU family:           25
Model:                17
Thread(s) per core:  2
Core(s) per socket:  96
Socket(s):            2
Stepping:             2
Frequency boost:      enabled
CPU max MHz:          3716.0000
CPU min MHz:          400.0000
BogoMIPS:             5099.85
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 rapl
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 bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3
invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1
```

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Platform Notes (Continued)

avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt
lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
pausefilter pfthreshold avic v_vmsave_vmload vgif v_spec_ctrl avx512vbmi
umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_lld

AMD-V
Virtualization:
L1d cache: 6 MiB (192 instances)
L1i cache: 6 MiB (192 instances)
L2 cache: 192 MiB (192 instances)
L3 cache: 2.3 GiB (24 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-23,192-215
NUMA node1 CPU(s): 24-47,216-239
NUMA node2 CPU(s): 48-71,240-263
NUMA node3 CPU(s): 72-95,264-287
NUMA node4 CPU(s): 96-119,288-311
NUMA node5 CPU(s): 120-143,312-335
NUMA node6 CPU(s): 144-167,336-359
NUMA node7 CPU(s): 168-191,360-383
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB filling, PBRSE-eIBRS Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	32K	6M	8	Data	1	64	1	64
L1i	32K	6M	8	Instruction	1	64	1	64
L2	1M	192M	8	Unified	2	2048	1	64
L3	96M	2.3G	16	Unified	3	98304	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

available: 8 nodes (0-7)
node 0 cpus: 0-23,192-215
node 0 size: 193232 MB
node 0 free: 191569 MB
node 1 cpus: 24-47,216-239
node 1 size: 193520 MB
node 1 free: 192465 MB
node 2 cpus: 48-71,240-263
node 2 size: 193520 MB
node 2 free: 192344 MB
node 3 cpus: 72-95,264-287
node 3 size: 193520 MB
node 3 free: 192668 MB
node 4 cpus: 96-119,288-311
node 4 size: 193520 MB

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Platform Notes (Continued)

```

node 4 free: 192832 MB
node 5 cpus: 120-143,312-335
node 5 size: 193520 MB
node 5 free: 192822 MB
node 6 cpus: 144-167,336-359
node 6 size: 193520 MB
node 6 free: 192803 MB
node 7 cpus: 168-191,360-383
node 7 size: 193418 MB
node 7 free: 192541 MB
node distances:
node  0  1  2  3  4  5  6  7
0:  10  12  12  12  32  32  32  32
1:  12  10  12  12  32  32  32  32
2:  12  12  10  12  32  32  32  32
3:  12  12  12  10  32  32  32  32
4:  32  32  32  32  10  12  12  12
5:  32  32  32  32  12  10  12  12
6:  32  32  32  32  12  12  10  12
7:  32  32  32  32  12  12  12  10

```

```

9. /proc/meminfo
MemTotal:      1584921348 kB

```

```

10. who -r
run-level 5 Aug 25 09:13

```

```

11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.6)
Default Target Status
graphical          running

```

```

12. Services, from systemctl list-unit-files
STATE          UNIT FILES
enabled        ModemManager apparmor blk-availability cloud-config cloud-final cloud-init
cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
grub-common grub-initrd-fallback irqbalance keyboard-setup lm-sensors lvm2-monitor
lxd-agent multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog
secureboot-db setvtrgb ssh systemd-networkd systemd-networkd-wait-online systemd-pstore
systemd-resolved systemd-timesyncd thermald ua-reboot-cmds ubuntu-advantage udisks2 ufw
vgauth
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled        console-getty debug-shell ipmievd iscsid nftables rsync serial-getty@
systemd-boot-check-no-failures systemd-network-generator systemd-sysext
systemd-time-wait-sync upower
generated        apport openipmi
indirect          uuuid
masked           cryptdisks cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS screen-cleanup sudo
x11-common

```

```

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.15.0-56-generic
root=UUID=648ce819-768f-4a42-b2bc-d283ffd40813
ro

```

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Platform Notes (Continued)

```

14. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 400 MHz and 3.72 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes
    Boost States: 0
    Total States: 3
    Pstate-P0: 2550MHz

```

```

-----
15. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space     0
vm.compaction_proactiveness    20
vm.dirty_background_bytes      0
vm.dirty_background_ratio     10
vm.dirty_bytes                 0
vm.dirty_expire_centisecs     3000
vm.dirty_ratio                 8
vm.dirty_writeback_centisecs   500
vm.dirtytime_expire_seconds    43200
vm.extfrag_threshold          500
vm.min_unmapped_ratio         1
vm.nr_hugepages                0
vm.nr_hugepages_mempolicy     0
vm.nr_overcommit_hugepages    0
vm.swappiness                  1
vm.watermark_boost_factor     15000
vm.watermark_scale_factor     10
vm.zone_reclaim_mode          1

```

```

-----
16. /sys/kernel/mm/transparent_hugepage
defrag          [always] defer defer+madvise madvise never
enabled        [always] madvise never
hpage_pmd_size 2097152
shmem_enabled  always within_size advise [never] deny force

```

```

-----
17. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs  60000
defrag                  1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000

```

```

-----
18. OS release
From /etc/*-release /etc/*-version
os-release Ubuntu 22.04.1 LTS

```

```

-----
19. Disk information
SPEC is set to: /tim/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on

```

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Platform Notes (Continued)

/dev/nvme0nlp2 ext4 879G 67G 768G 8% /

20. /sys/devices/virtual/dmi/id
Vendor: Supermicro
Product: Super Server
Product Family: SMC H13
Serial: 123456789

21. dmidecode
Additional information from dmidecode 3.3 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:
24x Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 1.5
BIOS Date: 08/22/2023
BIOS Revision: 5.27

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 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/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 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

=====
Fortran | 648.exchange2_s(base, peak)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin



SPEC CPU®2017 Integer Speed Result

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Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9684X)

SPECspeed®2017_int_base = 14.2

SPECspeed®2017_int_peak = 14.3

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Aug-2023
Hardware Availability: Jun-2023
Software Availability: Nov-2022

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 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lflang
-lamdalloc
```

C++ benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fvirtual-function-elimination -fvisibility=hidden -fopenmp=libomp
```

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Base Optimization Flags (Continued)

C++ benchmarks (continued):

-lomp -lamdlibm -lflang -lamdalloc-ext

Fortran benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc

Base Other Flags

C benchmarks:

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

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Peak Portability Flags

Same as Base Portability Flags



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Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Aug-2023
Hardware Availability: Jun-2023
Software Availability: Nov-2022

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Ofast -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-fstruct-layout=9 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

602.gcc_s: basepeak = yes

605.mcf_s: Same as 600.perlbench_s

625.x264_s: Same as 600.perlbench_s

657.xz_s: Same as 600.perlbench_s

C++ benchmarks:

```
620.omnetpp_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -finline-aggressive -mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fvirtual-function-elimination -fvisibility=hidden
-fopenmp=libomp -lomp -lamdlibm -lamdalloc-ext -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-return-type -Wno-unused-command-line-argument
```

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Test Date: Aug-2023
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Peak Other Flags (Continued)

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

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

<http://www.spec.org/cpu2017/flags/aocc400-flags.2023-09-13.html>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Genoa-revC.html>

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

<http://www.spec.org/cpu2017/flags/aocc400-flags.2023-09-13.xml>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Genoa-revC.xml>

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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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