



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL580 Gen12

(2.90 Ghz, Intel Xeon 6738P)

SPECspeed®2017_int_base = 14.7

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 3

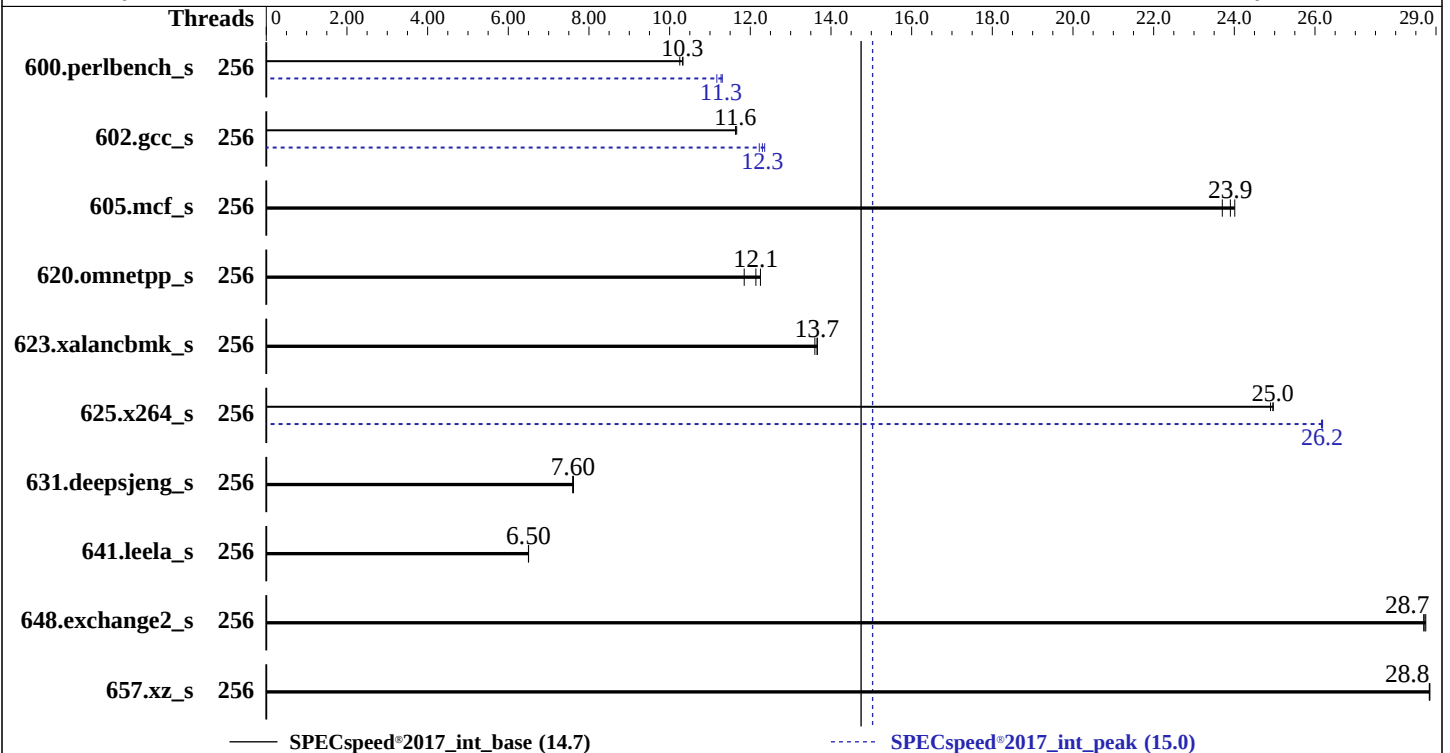
Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025



Hardware

CPU Name: Intel Xeon 6738P
Max MHz: 4200
Nominal: 2900
Enabled: 128 cores, 4 chips, 2 threads/core
Orderable: 1,2,4 Chips
Cache L1: 64 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 144 MB I+D on chip per chip
Other: None
Memory: 2 TB (32 x 64 GB 2Rx4 PC5-6400B-R)
Storage: 1 x 1.8 TB NVMe SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6
Kernel 6.4.0-150600.23.60-default
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
Parallel: Yes
Firmware: HPE BIOS Version v1.43 07/09/2025 released Jul-2025
File System: btrfs
System State: Run level 5 (multi-user graphical)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc memory allocator V5.0.1
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	256	172	10.3	173	10.3	<u>172</u>	<u>10.3</u>	256	<u>157</u>	<u>11.3</u>	157	11.3	159	11.2
602.gcc_s	256	341	11.7	342	11.6	<u>342</u>	<u>11.6</u>	256	326	12.2	<u>324</u>	<u>12.3</u>	322	12.4
605.mcf_s	256	199	23.7	197	24.0	<u>198</u>	<u>23.9</u>	256	199	23.7	197	24.0	<u>198</u>	<u>23.9</u>
620.omnetpp_s	256	<u>134</u>	<u>12.1</u>	133	12.3	138	11.8	256	<u>134</u>	<u>12.1</u>	133	12.3	138	11.8
623.xalanchbmk_s	256	<u>104</u>	<u>13.7</u>	104	13.7	104	13.6	256	<u>104</u>	<u>13.7</u>	104	13.7	104	13.6
625.x264_s	256	70.9	24.9	70.7	25.0	<u>70.7</u>	<u>25.0</u>	256	67.4	26.2	67.4	26.2	<u>67.4</u>	<u>26.2</u>
631.deepsjeng_s	256	<u>188</u>	<u>7.60</u>	189	7.60	188	7.62	256	<u>188</u>	<u>7.60</u>	189	7.60	188	7.62
641.leela_s	256	262	6.50	<u>262</u>	<u>6.50</u>	262	6.50	256	262	6.50	<u>262</u>	<u>6.50</u>	262	6.50
648.exchange2_s	256	102	28.7	102	28.7	<u>102</u>	<u>28.7</u>	256	102	28.7	102	28.7	<u>102</u>	<u>28.7</u>
657.xz_s	256	214	28.8	214	28.8	<u>214</u>	<u>28.8</u>	256	214	28.8	214	28.8	<u>214</u>	<u>28.8</u>

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
tuned-adm profile was stopped using "systemctl stop tuned"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
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, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>



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Platform Notes

BIOS Configurations : Parameters are selected in the order shown below

Workload Profile set to General Peak Frequency Compute

Enhanced Processor Performance Profile set to Aggressive

Thermal Configuration set to Maximum Cooling

Memory Patrol Scrubbing set to Disabled

Last Level Cache (LLC) Prefetch set to Enabled

XPT Prefetch set to Disabled

Intel UPI Prefetch set to Disabled

Workload Profile set to Custom

Collaborative Power Control set to Enabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost Mon Aug 25 13:38:54 2025

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

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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 254 (254.27+suse.167.g130293e510)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

```
1. uname -a
Linux localhost 6.4.0-150600.23.60-default #1 SMP PREEMPT_DYNAMIC Tue Jul 1 14:43:49 UTC 2025 (6f98261)
x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
13:38:54 up 2:40, 3 users, load average: 0.00, 0.00, 0.00
USER  TTY      FROM          LOGIN@  IDLE   JCPU   PCPU WHAT
benchmar pts/5    :pts/4:S.0    13:38   34.00s 0.04s  0.00s SCREEN -S cpu2017
benchmar pts/6    :pts/4:S.0    13:38    6.00s 0.77s  0.00s sudo su
```

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

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Platform Notes (Continued)

From the command 'logname': benchmark

```
-----
4. ulimit -a
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 8255057
max locked memory       (kbytes, -l) 8192
max memory size         (kbytes, -m) unlimited
open files              (-n) 1024
pipe size               (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) unlimited
cpu time                (seconds, -t) unlimited
max user processes      (-u) 8255057
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: benchmark [priv]
sshd: benchmark@notty
sh
/home/benchmark/.vscode-server/code-488a1f239235055e34e673291fb8d8c810886f81 command-shell --cli-data-dir
/home/benchmark/.vscode-server/cli --parent-process-id 6234 --on-host=127.0.0.1 --on-port
sh
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/bin/code
-server --connection-token=remotessh --accept-server-license-terms --start-server
--enable-remote-auto-shutdown --socket-path=/tmp/code-01351f1e-4cef-46ef-939f-968eca38cc6b
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/node
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/out/serv
er-main.js --connection-token=remotessh --accept-server-license-terms --start-server
--enable-remote-auto-shutdown --socket-path=/tmp/code-01351f1e-4cef-46ef-939f-968eca38cc6b
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/node
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/out/boot
strap-fork --type=ptyHost --logsPath /home/benchmark/.vscode-server/data/logs/20250825T110503
/bin/bash --init-file
/home/benchmark/.vscode-server/cli/servers/Stable-488a1f239235055e34e673291fb8d8c810886f81/server/out/vs/w
orkbench/contrib/terminal/common/scripts/shellIntegration-bash.sh
screen -S cpu2017
SCREEN -S cpu2017
/bin/bash
sudo su
sudo su
su
bash
bash
runcpu --nobuild --action validate --define default-platform-flags -c 6738P-avx512-speed-20240308.cfg
--define cores=128 --tune base,peak -o all --define intspeedaffinity --define smt-on --define drop_caches
intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
6738P-avx512-speed-20240308.cfg --define cores=128 --tune base,peak --output_format all --define
intspeedaffinity --define smt-on --define drop_caches --nopower --runmode speed --tune base:peak --size
refspeed intspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.005/temlogs/preenv.intspeed.005.0.log --lognum 005.0 --from_runcpu 2
```

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Platform Notes (Continued)

```
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) 6738P
vendor_id      : GenuineIntel
cpu family     : 6
model          : 173
stepping       : 1
microcode      : 0x10003c2
bugs           : spectre_v1 spectre_v2 spec_store_bypass swaps bhi
cpu cores      : 32
siblings       : 64
4 physical ids (chips)
256 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 2: core ids 0-31
physical id 3: core ids 0-31
physical id 0: apicids 0-63
physical id 1: apicids 128-191
physical id 2: apicids 256-319
physical id 3: apicids 384-447
```

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 2.39.3:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          46 bits physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                256
On-line CPU(s) list:   0-255
Vendor ID:              GenuineIntel
Model name:             Intel(R) Xeon(R) 6738P
CPU family:             6
Model:                 173
Thread(s) per core:    2
Core(s) per socket:    32
Socket(s):              4
Stepping:               1
BogoMIPS:               5800.00
Flags:                  fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx
pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good
nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni
pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma
cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt
tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm
3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 intel_ppin
cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep
bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw
avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
cqm_mbm_total cqm_mbm_local split_lock_detect user_shstk avx_vnni
```

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Platform Notes (Continued)

avx512_bf16 wbnoinvd dtherm ida arat pln pts vnmi avx512vbmi umip
pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni
avx512_bitalg tme avx512_vpopcntdq la57 rdpid bus_lock_detect
cldemote movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk
pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile amx_int8
flush_l1d arch_capabilities

VT-x

6 MiB (128 instances)

8 MiB (128 instances)

256 MiB (128 instances)

576 MiB (4 instances)

4

Virtualization:

L1d cache:

L1i cache:

L2 cache:

L3 cache:

NUMA node(s):

NUMA node0 CPU(s):

NUMA node1 CPU(s):

NUMA node2 CPU(s):

NUMA node3 CPU(s):

Vulnerability Gather data sampling:

Vulnerability Indirect target selection:

Vulnerability Itlb multihit:

Vulnerability L1tf:

Vulnerability Mds:

Vulnerability Meltdown:

Vulnerability Mmio stale data:

Vulnerability Reg file data sampling:

Vulnerability Retbleed:

Vulnerability Spec rstack overflow:

Vulnerability Spec store bypass:

Vulnerability Spectre v1:

Not affected

Not affected

Not affected

Not affected

Not affected

Not affected

Not affected

Not affected

Not affected

Not affected

Mitigation; Speculative Store Bypass disabled via prctl

Mitigation; usercopy/swaps barriers and __user pointer

sanitization

Mitigation; Enhanced / Automatic IBRS; IBPB conditional;

PBRSE-eIBRS Not affected; BHI BHI_DIS_S

Not affected

Not affected

Vulnerability Spectre v2:

Vulnerability Srbds:

Vulnerability Tsx async abort:

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	6M	12	Data	1	64	1	64
L1i	64K	8M	16	Instruction	1	64	1	64
L2	2M	256M	16	Unified	2	2048	1	64
L3	144M	576M	16	Unified	3	147456	1	64

8. numactl --hardware

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

available: 4 nodes (0-3)

node 0 cpus: 0-31,128-159

node 0 size: 515679 MB

node 0 free: 514141 MB

node 1 cpus: 32-63,160-191

node 1 size: 516078 MB

node 1 free: 513308 MB

node 2 cpus: 64-95,192-223

node 2 size: 516078 MB

node 2 free: 513827 MB

node 3 cpus: 96-127,224-255

node 3 size: 515960 MB

node 3 free: 513226 MB

node distances:

node 0 1 2 3

0: 10 21 21 21

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Platform Notes (Continued)

```
1: 21 10 21 21
2: 21 21 10 21
3: 21 21 21 10
```

```
9. /proc/meminfo
MemTotal:      2113328440 kB
```

```
10. who -r
run-level 5 Aug 25 10:59
```

```
11. systemd service manager version: systemd 254 (254.27+suse.167.g130293e510)
Default Target    Status
graphical         running
```

```
12. Services, from systemctl list-unit-files
STATE      UNIT FILES
enabled    ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd
           bluetooth chronyd cron display-manager getty@ irqbalance iscsi issue-generator kbdsettings
           klog lvm2-monitor nscd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels
           rollback rsyslog smartd sshd systemd-pstore virtqemud wicked wickedd-auto4 wickedd-dhcp4
           wickedd-dhcp6 wickedd-nanny wpa_supplicant
enabled-runtime systemd-remount-fs
disabled    NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs
           autostart-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates
           chrony console-getty cups cups-browsed debug-shell dmraid-activation dnsmasq ebttables
           exchange-bmc-os-info firewalld fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmievd
           iscsi-init iscsid issue-add-ssh-keys kexec-load ksm kvm_stat libvirt-guests lunmask
           man-db-create multipathd nfs nfs-blkmap nfs-server nfs-server nfs-server nmb openvpn@ ostree-remount
           rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd generate_opts smb snmpd
           snmptrapd speech-dispatcher systemd-boot-check-no-failures systemd-confext
           systemd-network-generator systemd-nspawn@ systemd-sysext systemd-time-wait-sync
           systemd-timesyncd tcsd tuned udisks2 update-system-flatpaks upower virtinterfaced
           virtlockd virtlogd virtnetworkd virtnodevdev virtnwfilterd virtsecret virtstoraged
           vncserver@ wpa_supplicant@
indirect    pcsd saned@ systemd-userdbd tftpd wickedd
```

```
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.23.60-default
root=UUID=31ddc59e-f5ed-47da-8154-f16fa2fc98b8
splash=silent
mitigations=auto
quiet
security=apparmor
```

```
14. cpupower frequency-info
analyzing CPU 200:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes
```

```
15. tuned-adm active
It seems that tuned daemon is not running, preset profile is not activated.
```

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Platform Notes (Continued)

Preset profile: virtual-host

16. sysctl

```
kernel.numa_balancing      0
kernel.randomize_va_space  2
vm.compaction_proactiveness 20
vm.dirty_background_bytes   0
vm.dirty_background_ratio   40
vm.dirty_bytes              0
vm.dirty_expire_centisecs   3000
vm.dirty_ratio              20
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
```

17. /sys/kernel/mm/transparent_hugepage

```
defrag      always defer defer+madvice [madvice] never
enabled     [always] madvice never
hpage_pmd_size 2097152
shmem_enabled always within_size advise [never] deny force
```

18. /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
```

19. OS release

```
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP6
```

20. Disk information

SPEC is set to: /home/cpu2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/nvme1n1p3	btrfs	1.8T	315G	1.5T	18%	/home

21. /sys/devices/virtual/dmi/id

```
Vendor:      HPE
Product:     HPE ProLiant Compute DL580 Gen12
Product Family: ProLiant
Serial:      SANJACSCM
```

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SPECspeed®2017_int_peak = 15.0

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025

Platform Notes (Continued)

22. dmidecode

Additional information from dmidecode 3.6 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:

4x Hynix HMC94AHBRA480N 64 GB 2 rank 6400

5x Micron MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400

23x Micron MTC40F2046S1RC64BD2 QSFF 64 GB 2 rank 6400

23. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: HPE

BIOS Version: 1.43

BIOS Date: 07/09/2025

BIOS Revision: 1.43

Firmware Revision: 1.17

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)
=====
```

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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```
=====
C++    | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
      | 641.leela_s(base, peak)
=====
```

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

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

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL580 Gen12

(2.90 Ghz, Intel Xeon 6738P)

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SPECspeed®2017_int_peak = 15.0

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

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Software Availability: Jul-2025

Base Compiler Invocation (Continued)

Fortran benchmarks:

ifx

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
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:

-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:

icx

(Continued on next page)



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Tested by: HPE

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Software Availability: Jul-2025

Peak Compiler Invocation (Continued)

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -w -m64 -std=c11 -Wl, -z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

```
602.gcc_s: -w -m64 -std=c11 -Wl, -z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc
```

605.mcf_s: basepeak = yes

```
625.x264_s: -w -std=c11 -m64 -Wl, -z,muldefs -xCORE-AVX512 -O3
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

657.xz_s: basepeak = yes

C++ benchmarks:

(Continued on next page)



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Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025

Peak Optimization Flags (Continued)

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-GNR-rev1.3.html>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html>

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

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-GNR-rev1.3.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

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