



SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL580 Gen12

(2.50 Ghz, Intel Xeon 6748P)

SPECspeed®2017_int_base = 14.5

SPECspeed®2017_int_peak = 14.8

CPU2017 License: 3

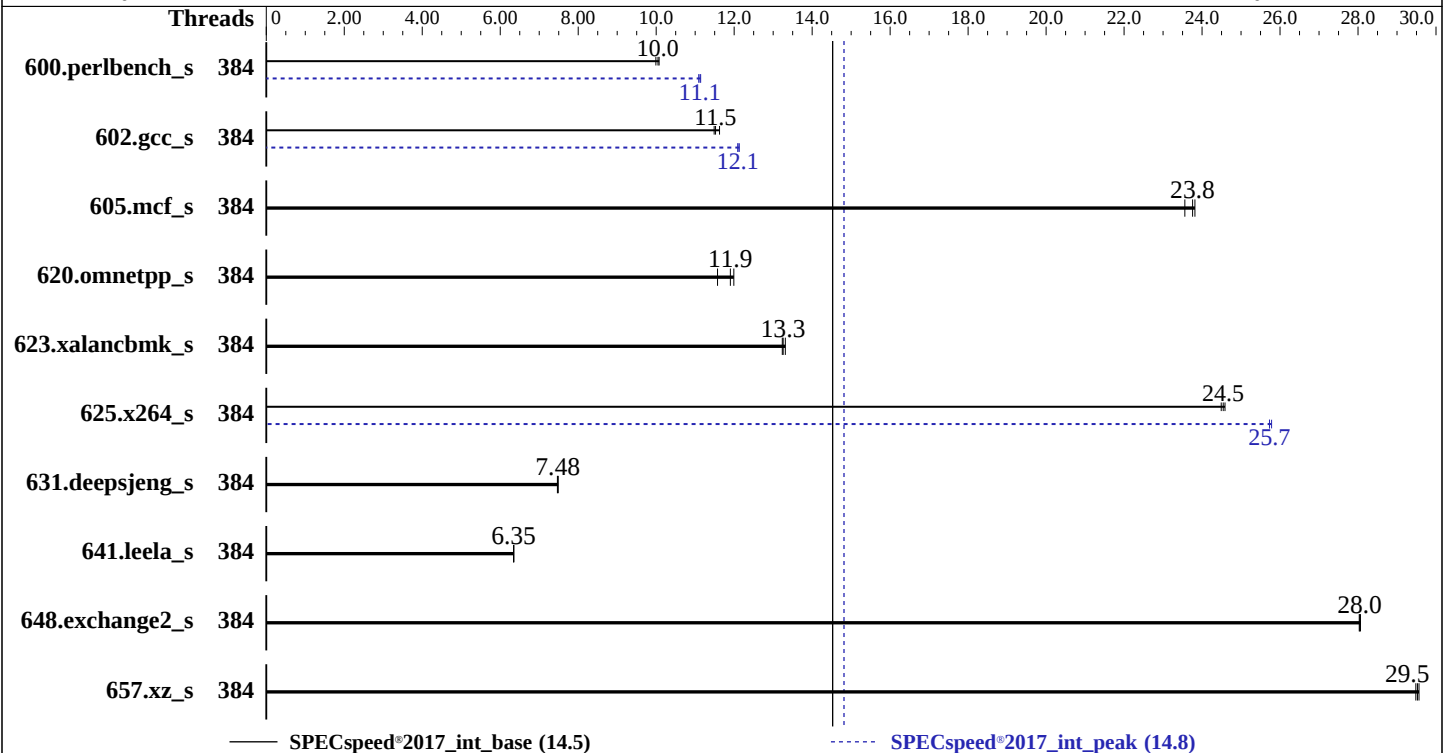
Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025



Hardware

CPU Name: Intel Xeon 6748P
Max MHz: 4100
Nominal: 2500
Enabled: 192 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: 192 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	384	<u>177</u>	<u>10.0</u>	176	10.1	178	9.99	384	160	11.1	<u>160</u>	<u>11.1</u>	159	11.1
602.gcc_s	384	347	11.5	343	11.6	<u>346</u>	<u>11.5</u>	384	<u>329</u>	<u>12.1</u>	329	12.1	328	12.1
605.mcf_s	384	<u>199</u>	<u>23.8</u>	198	23.8	200	23.6	384	<u>199</u>	<u>23.8</u>	198	23.8	200	23.6
620.omnetpp_s	384	141	11.6	136	12.0	<u>137</u>	<u>11.9</u>	384	141	11.6	136	12.0	<u>137</u>	<u>11.9</u>
623.xalanchmk_s	384	107	13.2	<u>107</u>	<u>13.3</u>	106	13.3	384	107	13.2	<u>107</u>	<u>13.3</u>	106	13.3
625.x264_s	384	71.7	24.6	72.0	24.5	<u>71.9</u>	<u>24.5</u>	384	68.6	25.7	68.4	25.8	<u>68.6</u>	<u>25.7</u>
631.deepsjeng_s	384	191	7.48	<u>192</u>	<u>7.48</u>	192	7.47	384	191	7.48	<u>192</u>	<u>7.48</u>	192	7.47
641.leela_s	384	269	6.34	<u>269</u>	<u>6.35</u>	269	6.35	384	269	6.34	<u>269</u>	<u>6.35</u>	269	6.35
648.exchange2_s	384	<u>105</u>	<u>28.0</u>	105	28.1	105	28.0	384	<u>105</u>	<u>28.0</u>	105	28.1	105	28.0
657.xz_s	384	<u>209</u>	<u>29.5</u>	209	29.6	210	29.5	384	<u>209</u>	<u>29.5</u>	209	29.6	210	29.5

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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

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 Thu Aug 21 16:12:55 2025

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

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1. uname -a
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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
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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
16:12:55 up 23 min, 4 users, load average: 0.06, 0.10, 0.49
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
root      :        :               15:55   ?xdm?  41:00   0.01s gdm-session-worker [pam/gdm-password]
root      seat0    login-          15:55   0.00s   0.00s   0.00s /usr/lib/gdm/gdm-x-session
--register-session --run-script gnome
root      :1       :               15:55   ?xdm?  41:00   0.00s /usr/lib/gdm/gdm-x-session
--register-session --run-script gnome
root      pts/1    10.28.70.146    15:56   16:38   0.00s   0.00s -bash
benchmar pts/2    :pts/9:S.0      16:03   9:47   0.07s   0.06s SCREEN -S cpu2017
```

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Platform Notes (Continued)

benchmark pts/3 :pts/9:S.0 16:03 7.00s 0.81s 0.03s sudo su

3. Username

From environment variable \$USER: root
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) 8254663
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) 8254663
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
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-ce0dd1b9-6ae9-4fab-9732-6a77863e939b
/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-ce0dd1b9-6ae9-4fab-9732-6a77863e939b
/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/20250821T155759
/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 6748P-avx512-speed-20240308.cfg
--define cores=192 --tune base,peak -o all --define intspeedaffinity --define smt-on --define drop_caches
intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
6748P-avx512-speed-20240308.cfg --define cores=192 --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/CPU2017.001/temlogs/preenv.intspeed.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
```

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Platform Notes (Continued)

\$SPEC = /home/cpu2017

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6748P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 173
stepping        : 1
microcode       : 0x10003c2
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores       : 48
siblings        : 96
4 physical ids (chips)
384 processors (hardware threads)
physical id 0:  core ids 0-47
physical id 1:  core ids 0-47
physical id 2:  core ids 0-47
physical id 3:  core ids 0-47
physical id 0:  apicids 0-95
physical id 1:  apicids 128-223
physical id 2:  apicids 256-351
physical id 3:  apicids 384-479
```

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):                 384
On-line CPU(s) list:    0-383
Vendor ID:              GenuineIntel
Model name:             Intel(R) Xeon(R) 6748P
CPU family:             6
Model:                  173
Thread(s) per core:     2
Core(s) per socket:     48
Socket(s):               4
Stepping:               1
BogoMIPS:               5000.00
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 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
                        avx512_bf16 wbnoinvd dtherm ida arat pln pts vnni avx512vbmi umip
```

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Platform Notes (Continued)

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

Virtualization:

VT-x

L1d cache:

9 MiB (192 instances)

L1i cache:

12 MiB (192 instances)

L2 cache:

384 MiB (192 instances)

L3 cache:

768 MiB (4 instances)

NUMA node(s):

4

NUMA node0 CPU(s):

0-47,192-239

NUMA node1 CPU(s):

48-95,240-287

NUMA node2 CPU(s):

96-143,288-335

NUMA node3 CPU(s):

144-191,336-383

Vulnerability Gather data sampling:

Not affected

Vulnerability Indirect target selection:

Not affected

Vulnerability Itlb multihit:

Not affected

Vulnerability L1tf:

Not affected

Vulnerability Mds:

Not affected

Vulnerability Meltdown:

Not affected

Vulnerability Mmio stale data:

Not affected

Vulnerability Reg file data sampling:

Not affected

Vulnerability Retbleed:

Not affected

Vulnerability Spec rstack overflow:

Not affected

Vulnerability Spec store bypass:

Mitigation; Speculative Store Bypass disabled via prctl

Vulnerability Spectre v1:

Mitigation; usercopy/swapgs barriers and __user pointer
sanitization

Vulnerability Spectre v2:

Mitigation; Enhanced / Automatic IBRS; IBPB conditional;
PBRSE-eIBRS Not affected; BHI BHI_DIS_S

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	48K	9M	12	Data	1	64	1	64
L1i	64K	12M	16	Instruction	1	64	1	64
L2	2M	384M	16	Unified	2	2048	1	64
L3	192M	768M	16	Unified	3	196608	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: 0-47,192-239

node 0 size: 515606 MB

node 0 free: 513501 MB

node 1 cpus: 48-95,240-287

node 1 size: 516032 MB

node 1 free: 511761 MB

node 2 cpus: 96-143,288-335

node 2 size: 516070 MB

node 2 free: 513856 MB

node 3 cpus: 144-191,336-383

node 3 size: 515988 MB

node 3 free: 513550 MB

node distances:

node 0 1 2 3

0: 10 21 21 21

1: 21 10 21 21

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Platform Notes (Continued)

2: 21 21 10 21
3: 21 21 21 10

9. /proc/meminfo

MemTotal: 2113227456 kB

10. who -r

run-level 5 Aug 21 15:50

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 nsd nvme-fc-boot-connections nvme-fc-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore virtqemu-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 autoyast-init-scripts blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait console-getty cups cups-browsed debug-shell dmraid-activation dnsmasq ebttables exchange-bmc-os-info firewalld fsiddd gpm grub2-once hwloc-dump-hwdata ipmi ipmievdev 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 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 tcshd tuned udisks2 update-system-flatpaks upower virtinterfaced virtlockd virtlogd virtnetworkd virtnodevd virtnwfilterd virtsecret virtstoraged vncserver@ wpa_supplicant@
----------	--

indirect	pcscd 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 117:

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.

Preset profile: virtual-host

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Platform Notes (Continued)

```
-----
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    313G  1.5T   18% /home

-----
21. /sys/devices/virtual/dmi/id
   Vendor:      HPE
   Product:     HPE ProLiant Compute DL580 Gen12
   Product Family: ProLiant
   Serial:      SANJACSCM

-----
22. dmidecode
```

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SPECspeed®2017_int_base = 14.5

SPECspeed®2017_int_peak = 14.8

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025

Platform Notes (Continued)

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

Fortran benchmarks:

ifx



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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

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



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CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2025

Hardware Availability: Jul-2025

Software Availability: Jul-2025

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:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

(Continued on next page)



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Hardware Availability: Jul-2025

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Peak Optimization Flags (Continued)

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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