



# SPEC CPU®2017 Integer Rate Result

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## Hewlett Packard Enterprise

(Test Sponsor: HPE)

### ProLiant Compute DL580 Gen12

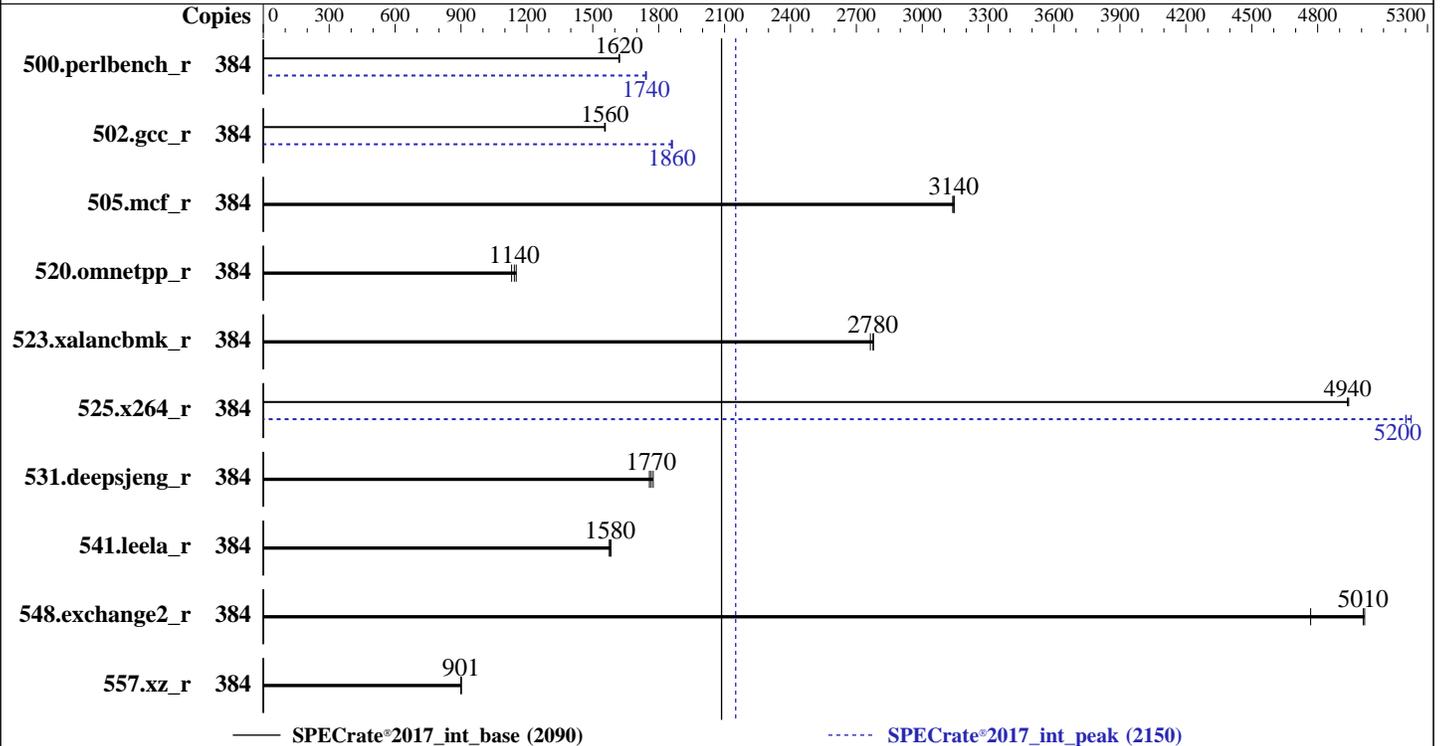
(2.50 Ghz, Intel Xeon 6748P)

SPECrate®2017\_int\_base = 2090

SPECrate®2017\_int\_peak = 2150

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: No  
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: 32/64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: BIOS to prefer performance at the cost of additional power usage



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	384	377	1620	<b><u>377</u></b>	<b><u>1620</u></b>	377	1620	384	351	1740	351	1740	<b><u>351</u></b>	<b><u>1740</u></b>
502.gcc_r	384	350	1550	<b><u>349</u></b>	<b><u>1560</u></b>	349	1560	384	292	1860	<b><u>292</u></b>	<b><u>1860</u></b>	293	1860
505.mcf_r	384	<b><u>197</u></b>	<b><u>3140</u></b>	197	3150	198	3140	384	<b><u>197</u></b>	<b><u>3140</u></b>	197	3150	198	3140
520.omnetpp_r	384	438	1150	<b><u>441</u></b>	<b><u>1140</u></b>	446	1130	384	438	1150	<b><u>441</u></b>	<b><u>1140</u></b>	446	1130
523.xalancbmk_r	384	<b><u>146</u></b>	<b><u>2780</u></b>	146	2780	147	2760	384	<b><u>146</u></b>	<b><u>2780</u></b>	146	2780	147	2760
525.x264_r	384	<b><u>136</u></b>	<b><u>4940</u></b>	136	4940	136	4940	384	129	5230	<b><u>129</u></b>	<b><u>5200</u></b>	129	5200
531.deepsjeng_r	384	250	1760	248	1780	<b><u>249</u></b>	<b><u>1770</u></b>	384	250	1760	248	1780	<b><u>249</u></b>	<b><u>1770</u></b>
541.leela_r	384	402	1580	404	1570	<b><u>403</u></b>	<b><u>1580</u></b>	384	402	1580	404	1570	<b><u>403</u></b>	<b><u>1580</u></b>
548.exchange2_r	384	<b><u>201</u></b>	<b><u>5010</u></b>	201	5010	211	4770	384	<b><u>201</u></b>	<b><u>5010</u></b>	201	5010	211	4770
557.xz_r	384	461	900	<b><u>460</u></b>	<b><u>901</u></b>	460	901	384	461	900	<b><u>460</u></b>	<b><u>901</u></b>	460	901

**SPECrate®2017\_int\_base = 2090**

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## 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 set to virtual-host using "tuned-adm profile virtual-host"
```

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/je5.0.1-32"  
MALLOC\_CONF = "retain:true"

## 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)

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## General Notes (Continued)

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>

## 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 Fri Aug 22 09:23:18 2025

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

-----  
Table of contents  
-----

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

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## Platform Notes (Continued)

09:23:18 up 17:34, 3 users, load average: 0.22, 0.24, 0.10

USER	TTY	FROM	LOGIN@	IDLE	JCPU	PCPU	WHAT
root	:		Thu15	?xdm?	48:31	0.01s	gdm-session-worker [pam/gdm-password]
root	seat0	login-	Thu15	0.00s	0.00s	0.00s	/usr/lib/gdm/gdm-x-session
--register-session --run-script gnome							
root	:		Thu15	?xdm?	48:31	0.00s	/usr/lib/gdm/gdm-x-session
--register-session --run-script gnome							
benchmark	pts/2	:pts/6:S.0	09:20	17:20m	0.09s	0.08s	SCREEN -S cpu2017
benchmark	pts/3	:pts/9:S.0	Thu16	6.00s	0.87s	0.05s	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
SCREEN -S cpu2017
/bin/bash
sudo su
sudo su
su
bash
bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=384 -c
6748P-avx512-rate-20240308.cfg --define smt-on --define cores=192 --define physicalfirst --define
invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=384 --configfile
6748P-avx512-rate-20240308.cfg --define smt-on --define cores=192 --define physicalfirst --define
invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower --runmode rate
--tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.003/templogs/preenv.intrate.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

```

### 6. /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) 6748P
vendor_id      : GenuineIntel
cpu family     : 6

```

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## Platform Notes (Continued)

```
model          : 173
stepping       : 1
microcode      : 0x10003c2
bugs           : spectre_v1 spectre_v2 spec_store_bypass swappgs 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 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
                        avx512_bf16 wbnoinvd dtherm ida arat pln pts vmmi 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
Virtualization:         VT-x
L1d cache:              9 MiB (192 instances)
```

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## Platform Notes (Continued)

```

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 Lltf: 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; PBR SB-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: 512250 MB
node 1 cpus: 48-95,240-287
node 1 size: 516032 MB
node 1 free: 505191 MB
node 2 cpus: 96-143,288-335
node 2 size: 516070 MB
node 2 free: 513811 MB
node 3 cpus: 144-191,336-383
node 3 size: 515988 MB
node 3 free: 508079 MB
node distances:
node  0  1  2  3
0:  10  21  21  21
1:  21  10  21  21
2:  21  21  10  21
3:  21  21  21  10

```

9. /proc/meminfo

MemTotal: 2113227456 kB

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## Platform Notes (Continued)

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 nscd nvme-fc-boot-connections nvme-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 autofsd autostart-initscripts 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 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 nmb openvpn@ ostree-remount rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd-generate_opts smb snmpd snmptrapd speech-dispatcherd 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 virtnodevd virtnwfilterd virtsecret virtstoraged vncserver@ wpa_supplicant@
indirect	pcsd saned@ systemd-userdbd tftp 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 306:  
Unable to determine current policy  
boost state support:  
Supported: yes  
Active: yes

15. tuned-adm active  
Current active profile: virtual-host

16. sysctl

kernel.numa_balancing	1
kernel.randomize_va_space	2
vm.compaction_proactiveness	20
vm.dirty_background_bytes	0
vm.dirty_background_ratio	5

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## Platform Notes (Continued)

```

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           10
vm.watermark_boost_factor 15000
vm.watermark_scale_factor 10
vm.zone_reclaim_mode    0

```

```

-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always 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
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

```

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## Platform Notes (Continued)

### 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 | 502.gcc\_r(peak)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308  
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=====

=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak) 525.x264\_r(base, peak)  
| 557.xz\_r(base, peak)  
=====

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=====

=====  
C | 502.gcc\_r(peak)  
=====

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=====

=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak) 525.x264\_r(base, peak)  
| 557.xz\_r(base, peak)  
=====

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=====

=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbnk\_r(base, peak) 531.deepsjeng\_r(base, peak)  
| 541.leela\_r(base, peak)  
=====

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=====

=====  
Fortran | 548.exchange2\_r(base, peak)  
=====

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=====



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant Compute DL580 Gen12**

(2.50 Ghz, Intel Xeon 6748P)

**SPECrate®2017\_int\_base = 2090**

**SPECrate®2017\_int\_peak = 2150**

**CPU2017 License:** 3

**Test Sponsor:** HPE

**Tested by:** HPE

**Test Date:** Aug-2025

**Hardware Availability:** Jul-2025

**Software Availability:** Jul-2025

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

## Base Portability Flags

```
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -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
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

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/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

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 -auto
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```



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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 Compiler Invocation

C benchmarks:

`icx`

C++ benchmarks:

`icpx`

Fortran benchmarks:

`ifx`

## Peak Portability Flags

```
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
```

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc

502.gcc_r: -m32 -L/opt/intel/oneapi/compiler/2024.1/lib32 -std=gnu89
-Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc
```

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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 Optimization Flags (Continued)

505.mcf\_r: basepeak = yes

```
525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

557.xz\_r: basepeak = yes

C++ benchmarks:

520.omnetpp\_r: basepeak = yes

523.xalancbmk\_r: basepeak = yes

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

548.exchange2\_r: 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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Tested with SPEC CPU®2017 v1.1.9 on 2025-08-22 10:23:17-0400.

Report generated on 2026-02-10 19:32:08 by CPU2017 PDF formatter v6716.

Originally published on 2026-02-10.