



SPEC CPU®2017 Floating Point Rate Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

Compute Scale-up Server 3250

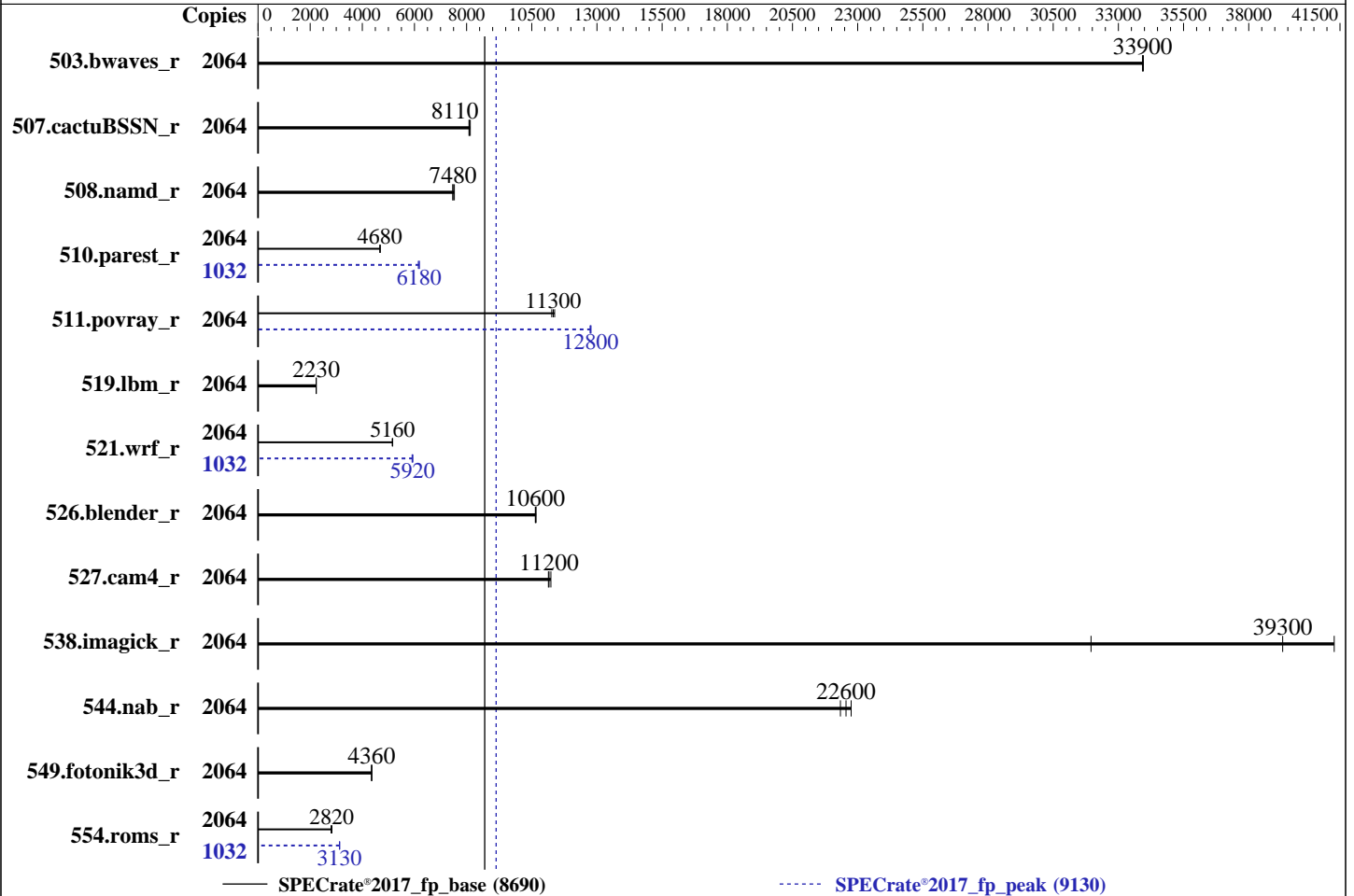
(2.00 GHz, Intel Xeon 6788P)

SPECrate®2017_fp_base = 8690

SPECrate®2017_fp_peak = 9130

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

Test Date: Feb-2026
Hardware Availability: Apr-2026
Software Availability: Feb-2026



Hardware

CPU Name: Intel Xeon 6788P
 Max MHz: 3800
 Nominal: 2000
 Enabled: 1032 cores, 12 chips, 2 threads/core
 Orderable: 4, 8, 12, 16 chip(s)
 Cache L1: 64 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 336 MB I+D on chip per chip
 Other: None
 Memory: 6 TB (96 x 64 GB 2Rx4 PC5-6400B-R)
 Storage: 1 x 1.5 TB NVMe SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP7
 Kernel 6.4.0-150700.53.31-default
 Compiler: C/C++: Version 2025.2 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2025.2 of Intel Fortran Compiler for Linux;
 Parallel: No
 Firmware: HPE Firmware Bundle Version 1.0.308 01/21/2026 released Jan-2026
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	2064	610	34000	610	33900	610	33900	2064	610	34000	610	33900	610	33900
507.cactuBSSN_r	2064	321	8140	322	8110	323	8090	2064	321	8140	322	8110	323	8090
508.namd_r	2064	262	7480	262	7470	260	7530	2064	262	7480	262	7470	260	7530
510.parest_r	2064	1154	4680	1153	4680	1155	4680	1032	439	6150	437	6180	437	6180
511.povray_r	2064	428	11300	426	11300	424	11400	2064	377	12800	378	12700	378	12800
519.lbm_r	2064	975	2230	975	2230	977	2230	2064	975	2230	975	2230	977	2230
521.wrf_r	2064	895	5160	896	5160	898	5150	1032	391	5910	390	5920	389	5940
526.blender_r	2064	296	10600	295	10600	295	10700	2064	296	10600	295	10600	295	10700
527.cam4_r	2064	321	11200	324	11100	323	11200	2064	321	11200	324	11100	323	11200
538.imagick_r	2064	124	41300	131	39300	161	32000	2064	124	41300	131	39300	161	32000
544.nab_r	2064	156	22300	154	22600	153	22700	2064	156	22300	154	22600	153	22700
549.fotonik3d_r	2064	1847	4360	1847	4360	1844	4360	2064	1847	4360	1847	4360	1844	4360
554.roms_r	2064	1170	2800	1158	2830	1164	2820	1032	524	3130	524	3130	525	3120

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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>

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOCONF = "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)

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General Notes (Continued)

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>

Platform Notes

BIOS Configuration:

Workload Profile set to Custom

Energy/Performance Bias set to Maximum Performance

Energy Efficient Turbo set to Disabled

Advanced Memory Protection set to Advanced ECC Support

SR-IOV set to Disabled

Intel Virtualization Technology (Intel VT, VT-x) set to Disabled

Adjacent Sector Prefetch set to Disabled

DCU Stream Prefetcher set to Disabled

Last Level Cache (LLC) Dead Line Allocation set to Disabled

Enhanced Processor Performance Profile set to Aggressive

Memory Patrol Scrubbing set to Disabled

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on gnh-108 Fri Feb 27 14:23:47 2026

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.179.g75eab961ea)
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 gnh-108 6.4.0-150700.53.31-default #1 SMP PREEMPT_DYNAMIC Tue Feb 3 14:18:17 UTC 2026 (73f3a11)

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Platform Notes (Continued)

x86_64 x86_64 x86_64 GNU/Linux

```

-----
2. w
 14:23:48 up 13 min,  2 users,  load average: 0.57, 3.16, 2.82
USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
test      ttyS0    -                14:17   37.00s 0.11s  0.06s login -- test
test      pts/0    -                14:17   37.00s 1.99s  0.05s sudo su

```

```

-----
3. Username
From environment variable $USER:  root
From the command 'logname':      test

```

```

-----
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) 24376413
max locked memory      (kbytes, -l) 8192
max memory size        (kbytes, -m) unlimited
open files             (-n) 40000
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) 24376413
virtual memory         (kbytes, -v) unlimited
file locks             (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=38
login -- test
-bash
sudo su
sudo su
su
bash
/bin/bash ./fprate_reportable.sh fprate.sh
/bin/bash ./fprate_reportable.sh fprate.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=2064 -c
ic2025.2-lin-graniterapids-rate-20250605.cfg --define smt-on --define cores=1032 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=2064 --configfile
ic2025.2-lin-graniterapids-rate-20250605.cfg --define smt-on --define cores=1032 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

```

```

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) 6788P
vendor_id      : GenuineIntel
cpu family     : 6

```

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Platform Notes (Continued)

```

model          : 173
stepping       : 1
microcode      : 0x1000405
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi vmscape
cpu cores      : 86
siblings       : 172
12 physical ids (chips)
2064 processors (hardware threads)
physical id 0: core ids 0-42,64-106
physical id 1: core ids 0-42,64-106
physical id 2: core ids 0-42,64-106
physical id 3: core ids 0-42,64-106
physical id 4: core ids 0-42,64-106
physical id 5: core ids 0-42,64-106
physical id 6: core ids 0-42,64-106
physical id 7: core ids 0-42,64-106
physical id 8: core ids 0-42,64-106
physical id 9: core ids 0-42,64-106
physical id 10: core ids 0-42,64-106
physical id 11: core ids 0-42,64-106
physical id 0: apicids 0-85,128-213
physical id 1: apicids 256-341,384-469
physical id 2: apicids 512-597,640-725
physical id 3: apicids 768-853,896-981
physical id 4: apicids 1024-1109,1152-1237
physical id 5: apicids 1280-1365,1408-1493
physical id 6: apicids 1536-1621,1664-1749
physical id 7: apicids 1792-1877,1920-2005
physical id 8: apicids 2048-2133,2176-2261
physical id 9: apicids 2304-2389,2432-2517
physical id 10: apicids 2560-2645,2688-2773
physical id 11: apicids 2816-2901,2944-3029

```

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 2.40.4:

```

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):                2064
On-line CPU(s) list:   0-2063
Vendor ID:             GenuineIntel
Model name:            Intel(R) Xeon(R) 6788P
CPU family:            6
Model:                 173
Thread(s) per core:    2
Core(s) per socket:    86
Socket(s):             1
Stepping:              1
CPU(s) scaling MHz:    21%
CPU max MHz:           3800.0000
CPU min MHz:           800.0000
BogoMIPS:              3999.52
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 arch_perfmon pebs bts rep_good nopl

```

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Platform Notes (Continued)

```
xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64
monitor ds_cpl 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 fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms
invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
xsavesopt 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 hwp hwp_act_window hwp_epp
hwp_pkg_req 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_lld arch_capabilities
ibpb_exit_to_user
```

L1d cache: 48.4 MiB (1032 instances)
L1i cache: 64.5 MiB (1032 instances)
L2 cache: 2 GiB (1032 instances)
L3 cache: 3.9 GiB (12 instances)

NUMA node(s): 24
NUMA node0 CPU(s): 0-42,1032-1074
NUMA node1 CPU(s): 43-85,1075-1117
NUMA node2 CPU(s): 86-128,1118-1160
NUMA node3 CPU(s): 129-171,1161-1203
NUMA node4 CPU(s): 172-214,1204-1246
NUMA node5 CPU(s): 215-257,1247-1289
NUMA node6 CPU(s): 258-300,1290-1332
NUMA node7 CPU(s): 301-343,1333-1375
NUMA node8 CPU(s): 344-386,1376-1418
NUMA node9 CPU(s): 387-429,1419-1461
NUMA node10 CPU(s): 430-472,1462-1504
NUMA node11 CPU(s): 473-515,1505-1547
NUMA node12 CPU(s): 516-558,1548-1590
NUMA node13 CPU(s): 559-601,1591-1633
NUMA node14 CPU(s): 602-644,1634-1676
NUMA node15 CPU(s): 645-687,1677-1719
NUMA node16 CPU(s): 688-730,1720-1762
NUMA node17 CPU(s): 731-773,1763-1805
NUMA node18 CPU(s): 774-816,1806-1848
NUMA node19 CPU(s): 817-859,1849-1891
NUMA node20 CPU(s): 860-902,1892-1934
NUMA node21 CPU(s): 903-945,1935-1977
NUMA node22 CPU(s): 946-988,1978-2020
NUMA node23 CPU(s): 989-1031,2021-2063

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/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional;

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Platform Notes (Continued)

Vulnerability Srbds:	PBRSE-eIBRS Not affected; BHI BHI_DIS_S
Vulnerability Tsa:	Not affected
Vulnerability Tsx async abort:	Not affected
Vulnerability Vmscape:	Mitigation; IBPB before exit to userspace

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	48.4M	12	Data	1	64	1	64
L1i	64K	64.5M	16	Instruction	1	64	1	64
L2	2M	2G	16	Unified	2	2048	1	64
L3	336M	3.9G	16	Unified	3	344064	1	64

8. numactl --hardware

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

```

available: 24 nodes (0-23)
node 0 cpus: 0-42,1032-1074
node 0 size: 256719 MB
node 0 free: 255803 MB
node 1 cpus: 43-85,1075-1117
node 1 size: 250007 MB
node 1 free: 249535 MB
node 2 cpus: 86-128,1118-1160
node 2 size: 258025 MB
node 2 free: 257579 MB
node 3 cpus: 129-171,1161-1203
node 3 size: 250023 MB
node 3 free: 249577 MB
node 4 cpus: 172-214,1204-1246
node 4 size: 258025 MB
node 4 free: 257483 MB
node 5 cpus: 215-257,1247-1289
node 5 size: 250023 MB
node 5 free: 249670 MB
node 6 cpus: 258-300,1290-1332
node 6 size: 258025 MB
node 6 free: 257617 MB
node 7 cpus: 301-343,1333-1375
node 7 size: 250023 MB
node 7 free: 249365 MB
node 8 cpus: 344-386,1376-1418
node 8 size: 258025 MB
node 8 free: 257725 MB
node 9 cpus: 387-429,1419-1461
node 9 size: 250023 MB
node 9 free: 249740 MB
node 10 cpus: 430-472,1462-1504
node 10 size: 258025 MB
node 10 free: 257726 MB
node 11 cpus: 473-515,1505-1547
node 11 size: 250023 MB
node 11 free: 249741 MB
node 12 cpus: 516-558,1548-1590
node 12 size: 257986 MB
node 12 free: 257689 MB
node 13 cpus: 559-601,1591-1633
node 13 size: 250023 MB
node 13 free: 249733 MB
node 14 cpus: 602-644,1634-1676

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Platform Notes (Continued)

```

node 14 size: 258025 MB
node 14 free: 257723 MB
node 15 cpus: 645-687,1677-1719
node 15 size: 250023 MB
node 15 free: 249735 MB
node 16 cpus: 688-730,1720-1762
node 16 size: 258025 MB
node 16 free: 257410 MB
node 17 cpus: 731-773,1763-1805
node 17 size: 250023 MB
node 17 free: 249414 MB
node 18 cpus: 774-816,1806-1848
node 18 size: 258025 MB
node 18 free: 257462 MB
node 19 cpus: 817-859,1849-1891
node 19 size: 250023 MB
node 19 free: 249448 MB
node 20 cpus: 860-902,1892-1934
node 20 size: 258025 MB
node 20 free: 257330 MB
node 21 cpus: 903-945,1935-1977
node 21 size: 250023 MB
node 21 free: 249546 MB
node 22 cpus: 946-988,1978-2020
node 22 size: 258025 MB
node 22 free: 257364 MB
node 23 cpus: 989-1031,2021-2063
node 23 size: 248943 MB
node 23 free: 248049 MB

```

node distances:

node	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
0:	10	12	16	16	16	16	18	18	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
1:	12	10	16	16	16	16	18	18	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
2:	16	16	10	12	18	18	16	16	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
3:	16	16	12	10	18	18	16	16	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
4:	16	16	18	18	10	12	16	16	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
5:	16	16	18	18	12	10	16	16	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
6:	18	18	16	16	16	16	10	12	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
7:	18	18	16	16	16	16	12	10	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
8:	40	40	40	40	40	40	40	40	10	12	16	16	16	16	18	18	40	40	40	40	40	40	40	40
9:	40	40	40	40	40	40	40	40	12	10	16	16	16	16	18	18	40	40	40	40	40	40	40	40
10:	40	40	40	40	40	40	40	40	16	16	10	12	18	18	16	16	40	40	40	40	40	40	40	40
11:	40	40	40	40	40	40	40	40	16	16	12	10	18	18	16	16	40	40	40	40	40	40	40	40
12:	40	40	40	40	40	40	40	40	16	16	18	18	10	12	16	16	40	40	40	40	40	40	40	40
13:	40	40	40	40	40	40	40	40	16	16	18	18	12	10	16	16	40	40	40	40	40	40	40	40
14:	40	40	40	40	40	40	40	40	18	18	16	16	16	16	10	12	40	40	40	40	40	40	40	40
15:	40	40	40	40	40	40	40	40	18	18	16	16	16	16	12	10	40	40	40	40	40	40	40	40
16:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	10	12	16	16	16	16	18	18
17:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	12	10	16	16	16	16	18	18
18:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	16	16	10	12	18	18	16	16
19:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	16	16	12	10	18	18	16	16
20:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	16	16	18	18	10	12	16	16
21:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	16	16	18	18	12	10	16	16
22:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	18	18	16	16	16	16	10	12
23:	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	18	18	16	16	16	16	12	10

```

-----
9. /proc/meminfo
MemTotal: 6240399640 kB

```

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(2.00 GHz, Intel Xeon 6788P)

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SPECrate®2017_fp_peak = 9130

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

Test Date: Feb-2026
Hardware Availability: Apr-2026
Software Availability: Feb-2026

Platform Notes (Continued)

10. who -r
run-level 3 Feb 27 14:17

11. Systemd service manager version: systemd 254 (254.27+suse.179.g75eab961ea)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd bluetooth chronyd
cpuset_cpunodemap cpuset_memory_spread cron dcd dcdchkgracefulshutdown dcdshutdown
display-manager getty@ hpe-auto-config hpe_irqbalance iscsi issue-generator kbdsettings
kdump kdump-early kdump-notify klog lvm2-monitor nsd postfix purge-kernels rollback
rsyslog smartd sshd systemd-pstore vgauthd vmblock-fuse vmtoolsd vsftpd wicked
wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-fsck-root systemd-remount-fs
disabled accounts-daemon amavis apache2 apache2@ autofs autoyast-initscripts blk-availability
bluetooth-mesh boot-sysctl ca-certificates certmonger chrony-wait clamd clamonacc
console-getty cups cups-browsed cxi-monitor debug-shell ebttables exchange-bmc-os-info
firewalld fsidd gpm grub2-once haveged ipmi ipmievd irqbalance iscsi-init iscsid
issue-add-ssh-keys kexec-load lunmask man-db-create mariadb mariadb@ multipathd named
ndctl-monitor nfs nfs-blkmap nfs-server nfserver nmb ostree-remount ostree-state-overlay@
rpcbind rpmconfigcheck rsyncd rtkit-daemon samba-bgqd smartd_generate_opts smb snmpd
snmptrapd spamd spampd speech-dispatcherd srp_daemon srp_daemon_port@ sysstat
sysstat_collect sysstat_summary systemd-boot-check-no-failures systemd-confext
systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
udisks2 update-system-flatpaks upower vncserver@ winbind wsdd ypbind
indirect serial-getty@ systemd-userdbd tftp wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.31-default
root=UUID=8f7dbb2d-77d8-40d9-b606-6b60ffd4e6ad
rd.auto=1
console=ttyS0,115200n8
selinux=0
security=
splash=silent
mitigations=auto
console=ttyS0,115200
udev.children-max=512
nmi_watchdog=0
uv_nmi.action=kdump
add_efi_memmap
tsc=nowatchdog
earlyprintk=ttyS0,115200
log_buf_len=8M
numa_balancing=disable
crashkernel=1G,high
watchdog_thresh=60
workqueue.watchdog_thresh=120

14. cpupower frequency-info
analyzing CPU 879:
current policy: frequency should be within 800 MHz and 3.80 GHz.
The governor "performance" may decide which speed to use

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Platform Notes (Continued)

within this range.

boost state support:

Supported: yes

Active: yes

15. tuned-adm active
No current active profile.

16. sysctl
kernel.numa_balancing 0
kernel.randomize_va_space 2
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 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 60
vm.watermark_boost_factor 15000
vm.watermark_scale_factor 10
vm.zone_reclaim_mode 0

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 SP7
hpe-foundation-release HPE Foundation Software 2.5.9, Build 757.1570.260209T0200.a.sles15sp7hpe-260209T0200

20. Disk information
SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme1n1p2 xfs 1.5T 37G 1.5T 3% /

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Platform Notes (Continued)

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

Vendor: HPE
Product: Compute Scale-up Server 3250
Product Family: 1590PID03030202
Serial: 5UFD3H1626-000

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:
46x Samsung M321R8GA0EB2-CCPKC 64 GB 2 rank 6400
50x Samsung M321R8GA0EB2-CCPWC 64 GB 2 rank 6400

23. BIOS

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

BIOS Vendor: HPE
BIOS Version: Bundle:1.0.308-20260123_101935 SFW:010.001.004.000.2601210240
BIOS Date: 01/21/2026

Compiler Version Notes

=====
C | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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=====
C++ | 508.namd_r(base, peak) 510.parest_r(base, peak)

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=====
C++, C | 511.povray_r(base, peak) 526.blender_r(base, peak)

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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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=====
C++, C, Fortran | 507.cactuBSSN_r(base, peak)

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CPU2017 License: 3

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Tested by: HPE

Test Date: Feb-2026

Hardware Availability: Apr-2026

Software Availability: Feb-2026

Compiler Version Notes (Continued)

Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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Fortran, C | 521.wrf_r(base, peak) 527.cam4_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

503.bwaves_r: -DSPEC_LP64

507.cactuBSSN_r: -DSPEC_LP64

508.namd_r: -DSPEC_LP64

510.parest_r: -DSPEC_LP64

511.povray_r: -DSPEC_LP64

519.lbm_r: -DSPEC_LP64

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Base Portability Flags (Continued)

521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian

526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char

527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG

538.imagick_r: -DSPEC_LP64

544.nab_r: -DSPEC_LP64

549.fotonik3d_r: -DSPEC_LP64

554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:

-w -std=c11 -m64 -Wl,-z,muldefs -xgraniterapids -Ofast -ffast-math

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc

-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids -Ofast

-ffast-math -flto -mfpmath=sse -funroll-loops

-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc

-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xgraniterapids -Ofast -ffast-math -flto

-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-nostandard-realloc-lhs -align array32byte -auto -ljemalloc

-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both Fortran and C:

-w -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast -ffast-math

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs

-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both C and C++:

-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast

-ffast-math -flto -mfpmath=sse -funroll-loops

-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512

-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:

-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast

-ffast-math -flto -mfpmath=sse -funroll-loops

-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512

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Test Sponsor: HPE

Tested by: HPE

Test Date: Feb-2026

Hardware Availability: Apr-2026

Software Availability: Feb-2026

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

```
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

(Continued on next page)



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Software Availability: Feb-2026

Peak Optimization Flags (Continued)

508.namd_r: basepeak = yes

```
510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

```
554.roms_r: -w -m64 -Wl,-z,muldefs -xgraniterapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both Fortran and C:

```
521.wrf_r: -w -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

```
511.povray_r: -w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes



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

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-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-CSS-GNR-rev1.3.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.xml>

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