



SPEC CPU®2017 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

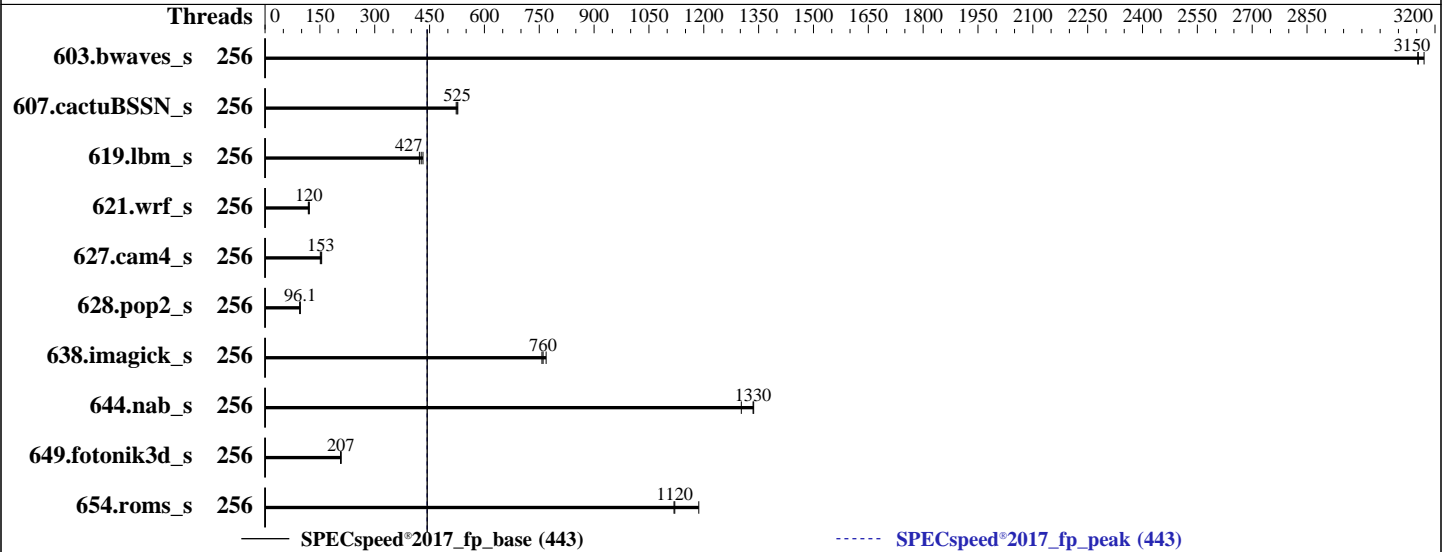
HPE Compute Scale-up Server 3250
(2.00 GHz, Intel Xeon 6788P)

SPECspeed®2017_fp_base = 443

SPECspeed®2017_fp_peak = 443

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

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



Hardware

CPU Name: Intel Xeon 6788P
 Max MHz: 3800
 Nominal: 2000
 Enabled: 688 cores, 8 chips
 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: 4 TB (64 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: Yes
 Firmware: HPE Firmware Bundle Version 1.0.340 02/13/2026 released Feb-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						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	256	18.6	3170	<u>18.7</u>	<u>3150</u>	18.7	3150	256	18.6	3170	<u>18.7</u>	<u>3150</u>	18.7	3150
607.cactuBSSN_s	256	31.6	527	31.9	523	<u>31.7</u>	<u>525</u>	256	31.6	527	31.9	523	<u>31.7</u>	<u>525</u>
619.lbm_s	256	12.1	432	12.4	422	<u>12.3</u>	<u>427</u>	256	12.1	432	12.4	422	<u>12.3</u>	<u>427</u>
621.wrf_s	256	109	121	112	118	<u>110</u>	<u>120</u>	256	109	121	112	118	<u>110</u>	<u>120</u>
627.cam4_s	256	58.6	151	<u>57.9</u>	<u>153</u>	57.2	155	256	58.6	151	<u>57.9</u>	<u>153</u>	57.2	155
628.pop2_s	256	<u>124</u>	<u>96.1</u>	125	94.8	124	96.1	256	<u>124</u>	<u>96.1</u>	125	94.8	124	96.1
638.imagick_s	256	18.8	769	<u>19.0</u>	<u>760</u>	19.0	757	256	18.8	769	<u>19.0</u>	<u>760</u>	19.0	757
644.nab_s	256	<u>13.1</u>	<u>1330</u>	13.4	1300	13.1	1340	256	<u>13.1</u>	<u>1330</u>	13.4	1300	13.1	1340
649.fotonik3d_s	256	44.1	207	<u>44.0</u>	<u>207</u>	43.8	208	256	44.1	207	<u>44.0</u>	<u>207</u>	43.8	208
654.roms_s	256	13.3	1190	<u>14.0</u>	<u>1120</u>	14.1	1120	256	13.3	1190	<u>14.0</u>	<u>1120</u>	14.1	1120

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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"

Environment Variables Notes

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

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Redhat Enterprise Linux 8.0
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>

Platform Notes

BIOS Configurations : Parameters are selected in the order shown below
Workload Profile set to HPC
Workload Profile set to Custom
Power Regulator set to Static High Performance Mode
Energy/Performance Bias set to Maximum Performance
Energy Efficient Turbo set to Disabled
Adjacent Sector Prefetch set to Disabled

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Platform Notes (Continued)

LLC Prefetch set to Enabled
 Last Level Cache (LLC) Dead Line Allocation set to Disabled
 Enhanced Processor Performance Profile set to Aggressive
 Memory Patrol Scrubbing 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
 Dynamic Prefetch Throttling set to Disabled
 Enabled Cores per Processor set to 64
 Page Policy set to Open Adaptive
 Intel Hyper-Threading set to Disabled
 Sub-NUMA Clustering set to Auto

Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on gnh-159 Sun Mar 15 08:45:59 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-159 6.4.0-150700.53.31-default #1 SMP PREEMPT_DYNAMIC Tue Feb 3 14:18:17 UTC 2026 (73f3a11)
x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
08:45:59 up 2:23, 1 user, load average: 0.18, 0.13, 0.21
USER      TTY      FROM          LOGIN@      IDLE        JCPU        PCPU        WHAT
test     ttyS0    -             06:24      12.00s     0.22s     0.04s    login -- test
test     pts/0    -             06:24      12.00s     1.02s     0.19s    sudo su
```

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Platform Notes (Continued)

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) 16250147
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) 16250147
virtual memory         (kbytes, -v) unlimited
file locks             (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=39
login -- test
-bash
sudo su
sudo su
su
bash
bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2025.2-lin-graniterapids-speed-20250605.cfg --define cores=256 --tune base,peak -o all --define
  drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2025.2-lin-graniterapids-speed-20250605.cfg --define cores=256 --tune base,peak --output_format all
  --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
  --note-preenv --logfile $SPEC/tmp/CPU2017.006/templogs/preenv.fpspeed.006.0.log --lognum 006.0
  --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
model           : 173
stepping        : 1
microcode       : 0x1000405
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi vmscape
cpu cores       : 64
siblings        : 64
8 physical ids (chips)
512 processors (hardware threads)
physical id 0:  core ids 0-31,64-95
physical id 1:  core ids 0-31,64-95
physical id 2:  core ids 0-31,64-95
```

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Platform Notes (Continued)

```

physical id 3: core ids 0-31,64-95
physical id 4: core ids 0-31,64-95
physical id 5: core ids 0-31,64-95
physical id 6: core ids 0-31,64-95
physical id 7: core ids 0-31,64-95
physical id 0: apicids
0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190
physical id 1: apicids
256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446
physical id 2: apicids
512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702
physical id 3: apicids
768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958
physical id 4: apicids
1024, 1026, 1028, 1030, 1032, 1034, 1036, 1038, 1040, 1042, 1044, 1046, 1048, 1050, 1052, 1054, 1056, 1058, 1060, 1062, 1064, 1066, 1068, 1070, 1072, 1074, 1076, 1078, 1080, 1082, 1084, 1086, 1152, 1154, 1156, 1158, 1160, 1162, 1164, 1166, 1168, 1170, 1172, 1174, 1176, 1178, 1180, 1182, 1184, 1186, 1188, 1190, 1192, 1194, 1196, 1198, 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214
physical id 5: apicids
1280, 1282, 1284, 1286, 1288, 1290, 1292, 1294, 1296, 1298, 1300, 1302, 1304, 1306, 1308, 1310, 1312, 1314, 1316, 1318, 1320, 1322, 1324, 1326, 1328, 1330, 1332, 1334, 1336, 1338, 1340, 1342, 1408, 1410, 1412, 1414, 1416, 1418, 1420, 1422, 1424, 1426, 1428, 1430, 1432, 1434, 1436, 1438, 1440, 1442, 1444, 1446, 1448, 1450, 1452, 1454, 1456, 1458, 1460, 1462, 1464, 1466, 1468, 1470
physical id 6: apicids
1536, 1538, 1540, 1542, 1544, 1546, 1548, 1550, 1552, 1554, 1556, 1558, 1560, 1562, 1564, 1566, 1568, 1570, 1572, 1574, 1576, 1578, 1580, 1582, 1584, 1586, 1588, 1590, 1592, 1594, 1596, 1598, 1664, 1666, 1668, 1670, 1672, 1674, 1676, 1678, 1680, 1682, 1684, 1686, 1688, 1690, 1692, 1694, 1696, 1698, 1700, 1702, 1704, 1706, 1708, 1710, 1712, 1714, 1716, 1718, 1720, 1722, 1724, 1726
physical id 7: apicids
1792, 1794, 1796, 1798, 1800, 1802, 1804, 1806, 1808, 1810, 1812, 1814, 1816, 1818, 1820, 1822, 1824, 1826, 1828, 1830, 1832, 1834, 1836, 1838, 1840, 1842, 1844, 1846, 1848, 1850, 1852, 1854, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944, 1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982

```

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):                 512
On-line CPU(s) list:   0-511
Vendor ID:              GenuineIntel
Model name:             Intel(R) Xeon(R) 6788P
CPU family:             6
Model:                  173
Thread(s) per core:    1
Core(s) per socket:    64

```

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Platform Notes (Continued)

```

Socket(s): 8
Stepping: 1
CPU(s) scaling MHz: 21%
CPU max MHz: 3800.0000
CPU min MHz: 800.0000
BogoMIPS: 3999.48
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
pdpelgb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl
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
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 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: 24 MiB (512 instances)
L1i cache: 32 MiB (512 instances)
L2 cache: 1 GiB (512 instances)
L3 cache: 2.6 GiB (8 instances)
NUMA node(s): 16
NUMA node0 CPU(s): 0-31
NUMA node1 CPU(s): 32-63
NUMA node2 CPU(s): 64-95
NUMA node3 CPU(s): 96-127
NUMA node4 CPU(s): 128-159
NUMA node5 CPU(s): 160-191
NUMA node6 CPU(s): 192-223
NUMA node7 CPU(s): 224-255
NUMA node8 CPU(s): 256-287
NUMA node9 CPU(s): 288-319
NUMA node10 CPU(s): 320-351
NUMA node11 CPU(s): 352-383
NUMA node12 CPU(s): 384-415
NUMA node13 CPU(s): 416-447
NUMA node14 CPU(s): 448-479
NUMA node15 CPU(s): 480-511
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

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Platform Notes (Continued)

Vulnerability Spectre v2:	Mitigation; Enhanced / Automatic IBRS; IBPB conditional; PBRSE-eIBRS Not affected; BHI BHI_DIS_S
Vulnerability Srbds:	Not affected
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	24M	12	Data	1	64	1	64
L1i	64K	32M	16	Instruction	1	64	1	64
L2	2M	1G	16	Unified	2	2048	1	64
L3	336M	2.6G	16	Unified	3	344064	1	64

8. numactl --hardware

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

```

available: 16 nodes (0-15)
node 0 cpus: 0-31
node 0 size: 257122 MB
node 0 free: 256294 MB
node 1 cpus: 32-63
node 1 size: 250021 MB
node 1 free: 249606 MB
node 2 cpus: 64-95
node 2 size: 258000 MB
node 2 free: 257475 MB
node 3 cpus: 96-127
node 3 size: 250037 MB
node 3 free: 249645 MB
node 4 cpus: 128-159
node 4 size: 258039 MB
node 4 free: 257617 MB
node 5 cpus: 160-191
node 5 size: 250037 MB
node 5 free: 249614 MB
node 6 cpus: 192-223
node 6 size: 258039 MB
node 6 free: 257611 MB
node 7 cpus: 224-255
node 7 size: 250037 MB
node 7 free: 249618 MB
node 8 cpus: 256-287
node 8 size: 258039 MB
node 8 free: 256507 MB
node 9 cpus: 288-319
node 9 size: 250037 MB
node 9 free: 249643 MB
node 10 cpus: 320-351
node 10 size: 258039 MB
node 10 free: 257464 MB
node 11 cpus: 352-383
node 11 size: 250037 MB
node 11 free: 249577 MB
node 12 cpus: 384-415
node 12 size: 258039 MB
node 12 free: 257632 MB
node 13 cpus: 416-447
node 13 size: 250037 MB
node 13 free: 249710 MB

```

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Platform Notes (Continued)

```

node 14 cpus: 448-479
node 14 size: 258039 MB
node 14 free: 255732 MB
node 15 cpus: 480-511
node 15 size: 248970 MB
node 15 free: 248610 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
0:  10 12 16 16 16 16 18 18 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
2:  16 16 10 12 18 18 16 16 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
4:  16 16 18 18 10 12 16 16 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
6:  18 18 16 16 16 16 10 12 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
8:  40 40 40 40 40 40 40 40 10 12 16 16 16 16 18 18
9:  40 40 40 40 40 40 40 40 12 10 16 16 16 16 18 18
10: 40 40 40 40 40 40 40 40 16 16 10 12 18 18 16 16
11: 40 40 40 40 40 40 40 40 16 16 12 10 18 18 16 16
12: 40 40 40 40 40 40 40 40 16 16 18 18 10 12 16 16
13: 40 40 40 40 40 40 40 40 16 16 18 18 12 10 16 16
14: 40 40 40 40 40 40 40 40 18 18 16 16 16 16 10 12
15: 40 40 40 40 40 40 40 40 18 18 16 16 16 16 12 10

```

```

-----
9. /proc/meminfo
   MemTotal:      4160075548 kB

```

```

-----
10. who -r
    run-level 3 Mar 15 06:25

```

```

-----
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 nscd 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
                    firewallld 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 nfsserver mmb 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 tftpd wickedd

```

(Continued on next page)



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(2.00 GHz, Intel Xeon 6788P)

SPECspeed®2017_fp_base = 443

SPECspeed®2017_fp_peak = 443

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

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

Platform Notes (Continued)

13. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.31-default
root=UUID=3ce88dfc-10b5-4b60-8fd3-dd57db4a46f6
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 325:
  current policy: frequency should be within 800 MHz and 3.80 GHz.
                   The governor "performance" may decide which speed to use
                   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
```

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Platform Notes (Continued)

17. /sys/kernel/mm/transparent_hugepage
defrag always defer defer+advise [advise] never
enabled [always] advise 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/nvme0n1p2 xfs 1.5T 40G 1.5T 3% /

21. /sys/devices/virtual/dmi/id
Vendor: HPE
Product: Compute Scale-up Server 3250
Product Family: 1590PID03030202
Serial: 5UFD3H1634-000

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:
64x Micron MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: HPE
BIOS Version: Bundle:1.0.340-20260215_094624 SFW:010.001.014.000.2602130229
BIOS Date: 02/13/2026

Compiler Version Notes

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(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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Hardware Availability: Apr-2026

Software Availability: Feb-2026

Compiler Version Notes (Continued)

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=====
C++, C, Fortran | 607.cactuBSSN_s(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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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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=====
Fortran | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(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 | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(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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Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64

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Base Portability Flags (Continued)

```
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -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 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:

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

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 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, 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 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:

icx

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Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: basepeak = yes

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: basepeak = yes

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

(Continued on next page)



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Peak Optimization Flags (Continued)

607.cactuBSSN_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-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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Tested with SPEC CPU®2017 v1.1.9 on 2026-03-15 09:45:59-0400.

Report generated on 2026-05-26 11:27:17 by CPU2017 PDF formatter v6716.

Originally published on 2026-04-21.