SPEC CPU®2017 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

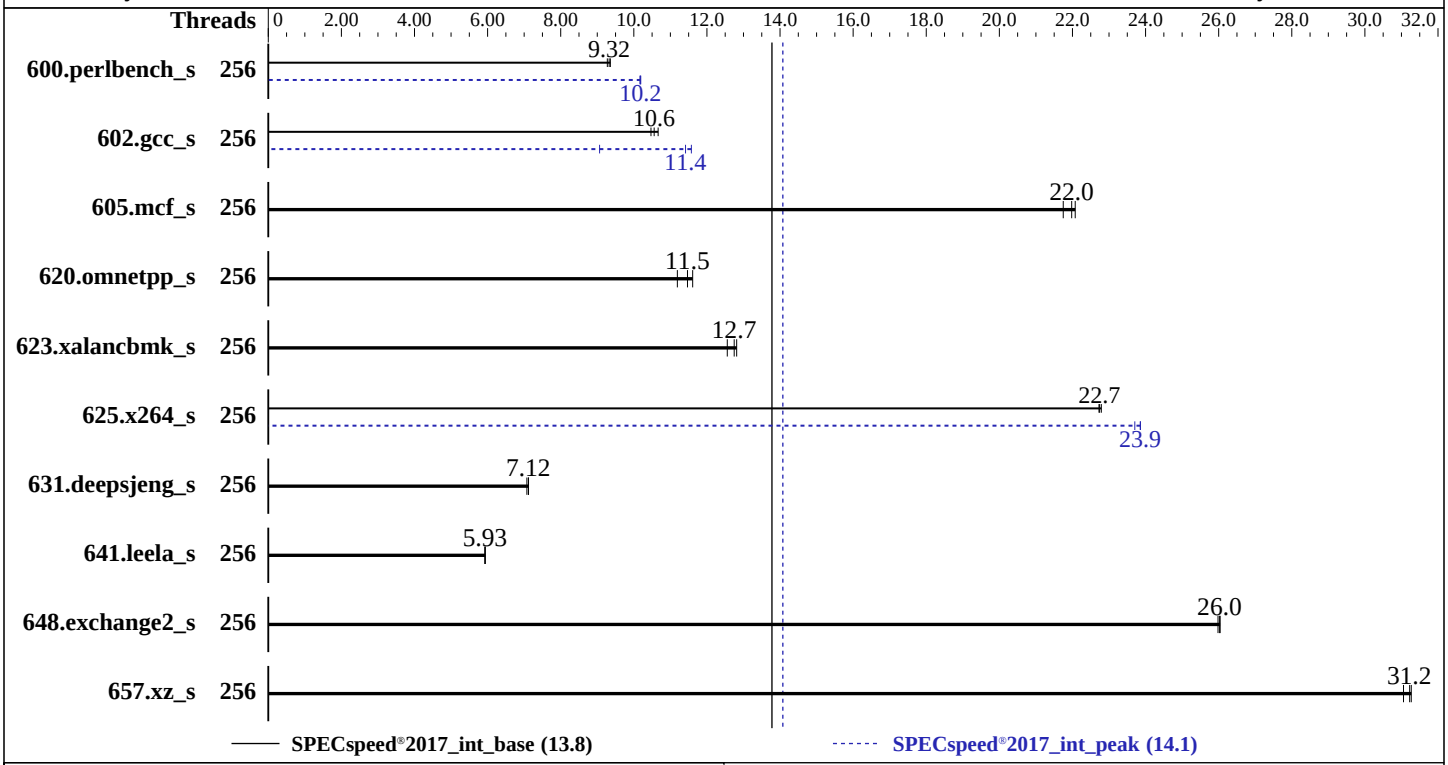
HPE Compute Scale-up Server 3250
(2.00 GHz, Intel Xeon 6788P)

SPECspeed®2017_int_base = 13.8

SPECspeed®2017_int_peak = 14.1

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:	1032 cores, 12 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:	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:	Yes
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						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	256	**190**	**9.32**	191	9.28	190	9.36	256	174	10.2	**174**	**10.2**	175	10.2
602.gcc_s	256	**377**	**10.6**	380	10.5	373	10.7	256	**349**	**11.4**	344	11.6	439	9.06
605.mcf_s	256	**215**	**22.0**	217	21.7	214	22.1	256	**215**	**22.0**	217	21.7	214	22.1
620.omnetpp_s	256	**142**	**11.5**	146	11.2	140	11.6	256	**142**	**11.5**	146	11.2	140	11.6
623.xalancbmk_s	256	113	12.6	**111**	**12.7**	111	12.8	256	113	12.6	**111**	**12.7**	111	12.8
625.x264_s	256	77.4	22.8	77.6	22.7	**77.6**	**22.7**	256	74.4	23.7	73.9	23.9	**73.9**	**23.9**
631.deepsjeng_s	256	203	7.07	**201**	**7.12**	201	7.12	256	203	7.07	**201**	**7.12**	201	7.12
641.leela_s	256	**288**	**5.93**	288	5.93	288	5.93	256	**288**	**5.93**	288	5.93	288	5.93
648.exchange2_s	256	**113**	**26.0**	113	26.0	113	26.0	256	**113**	**26.0**	113	26.0	113	26.0
657.xz_s	256	**198**	**31.2**	199	31.1	198	31.3	256	**198**	**31.2**	199	31.1	198	31.3

SPECspeed®2017_int_base = 13.8

SPECspeed®2017_int_peak = 14.1

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
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017_new_vish/lib/intel64:/home/cpu2017_new_vish/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 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 Configuration:
Workload Profile set to Custom
 Intel Hyper-Threading set to Disabled
 Enabled Cores per Processor set to 64
 Dynamic Prefetch Throttling set to Disabled
 Sub-NUMA Clustering set to Auto

 Sysinfo program /home/cpu2017_new_vish/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on gnh-108 Fri Mar 13 23:44:07 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)
   x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    23:44:08 up 14:52,  3 users,  load average: 3.45, 4.81, 2.94
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   test     ttyS0    -                08:55   13:34m  0.33s  0.04s login -- test
   test     pts/0    -                08:55   13:34m  1.14s  0.29s sudo su
   test     pts/1    10.30.195.94     22:01    1:42m  0.04s  0.04s -bash

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

 ------------------------------------------------------------
```

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Platform Notes (Continued)

```
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) 24378855
  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) 24378855
  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-sapphirerapids-speed-20250605.cfg --define cores=256 --tune base,peak -o all --define
   intspeedaffinity --define drop_caches intspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2025.2-lin-sapphirerapids-speed-20250605.cfg --define cores=256 --tune base,peak --output_format all
   --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
   intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.005/templogs/preenv.intspeed.005.0.log
   --lognum 005.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017_new_vish

------------------------------------------------------------
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
    12 physical ids (chips)
    768 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
    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
```

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Platform Notes (Continued)

```
physical id 8: core ids 0-31,64-95
physical id 9: core ids 0-31,64-95
physical id 10: core ids 0-31,64-95
physical id 11: core ids 0-31,64-95
physical id 0: apicids
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,128,130,132,13
4,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,184,186
,188,190
physical id 1: apicids
256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,3
08,310,312,314,316,318,384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,422,42
4,426,428,430,432,434,436,438,440,442,444,446
physical id 2: apicids
512,514,516,518,520,522,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,5
64,566,568,570,572,574,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668,670,672,674,676,678,68
0,682,684,686,688,690,692,694,696,698,700,702
physical id 3: apicids
768,770,772,774,776,778,780,782,784,786,788,790,792,794,796,798,800,802,804,806,808,810,812,814,816,818,8
20,822,824,826,828,830,896,898,900,902,904,906,908,910,912,914,916,918,920,922,924,926,928,930,932,934,93
6,938,940,942,944,946,948,950,952,954,956,958
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
physical id 8: apicids
2048,2050,2052,2054,2056,2058,2060,2062,2064,2066,2068,2070,2072,2074,2076,2078,2080,2082,2084,2086,2088,
2090,2092,2094,2096,2098,2100,2102,2104,2106,2108,2110,2176,2178,2180,2182,2184,2186,2188,2190,2192,2194,
2196,2198,2200,2202,2204,2206,2208,2210,2212,2214,2216,2218,2220,2222,2224,2226,2228,2230,2232,2234,2236,
2238
physical id 9: apicids
2304,2306,2308,2310,2312,2314,2316,2318,2320,2322,2324,2326,2328,2330,2332,2334,2336,2338,2340,2342,2344,
2346,2348,2350,2352,2354,2356,2358,2360,2362,2364,2366,2432,2434,2436,2438,2440,2442,2444,2446,2448,2450,
2452,2454,2456,2458,2460,2462,2464,2466,2468,2470,2472,2474,2476,2478,2480,2482,2484,2486,2488,2490,2492,
2494
physical id 10: apicids
2560,2562,2564,2566,2568,2570,2572,2574,2576,2578,2580,2582,2584,2586,2588,2590,2592,2594,2596,2598,2600,
2602,2604,2606,2608,2610,2612,2614,2616,2618,2620,2622,2688,2690,2692,2694,2696,2698,2700,2702,2704,2706,
2708,2710,2712,2714,2716,2718,2720,2722,2724,2726,2728,2730,2732,2734,2736,2738,2740,2742,2744,2746,2748,
2750
physical id 11: apicids
2816,2818,2820,2822,2824,2826,2828,2830,2832,2834,2836,2838,2840,2842,2844,2846,2848,2850,2852,2854,2856,
2858,2860,2862,2864,2866,2868,2870,2872,2874,2876,2878,2944,2946,2948,2950,2952,2954,2956,2958,2960,2962,
2964,2966,2968,2970,2972,2974,2976,2978,2980,2982,2984,2986,2988,2990,2992,2994,2996,2998,3000,3002,3004,
3006
```

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Platform Notes (Continued)

```
  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):                               768
  On-line CPU(s) list:                  0-767
  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
  Socket(s):                            12
  Stepping:                             1
  CPU(s) scaling MHz:                   21%
  CPU max MHz:                          3800.0000
  CPU min MHz:                          800.0000
  BogoMIPS:                             3999.53
  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
                                        xtopology nonstop_tsc cpuid aperfmperf 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 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 vnmi
                                        avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                                        vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57
                                        rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm
                                        md_clear serialize tsxldtrk pconfig arch_lbr ibt amx_bf16
                                        avx512_fp16 amx_tile amx_int8 flush_l1d arch_capabilities
                                        ibpb_exit_to_user
  Virtualization:                       VT-x
  L1d cache:                            36 MiB (768 instances)
  L1i cache:                            48 MiB (768 instances)
  L2 cache:                             1.5 GiB (768 instances)
  L3 cache:                             3.9 GiB (12 instances)
  NUMA node(s):                         24
  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
```

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Platform Notes (Continued)

```
   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
   NUMA node16 CPU(s):                   512-543
   NUMA node17 CPU(s):                   544-575
   NUMA node18 CPU(s):                   576-607
   NUMA node19 CPU(s):                   608-639
   NUMA node20 CPU(s):                   640-671
   NUMA node21 CPU(s):                   672-703
   NUMA node22 CPU(s):                   704-735
   NUMA node23 CPU(s):                   736-767
   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;
                                         PBRSB-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      36M   12 Data            1     64        1             64
      L1i       64K      48M   16 Instruction     1     64        1             64
      L2         2M     1.5G   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: 0-31
   node 0 size: 256992 MB
   node 0 free: 256469 MB
   node 1 cpus: 32-63
   node 1 size: 250021 MB
   node 1 free: 249569 MB
   node 2 cpus: 64-95
   node 2 size: 258039 MB
   node 2 free: 257651 MB
   node 3 cpus: 96-127
   node 3 size: 250037 MB
   node 3 free: 249677 MB
   node 4 cpus: 128-159
```

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Platform Notes (Continued)

```
  node 4 size: 258039 MB
  node 4 free: 257654 MB
  node 5 cpus: 160-191
  node 5 size: 250037 MB
  node 5 free: 249558 MB
  node 6 cpus: 192-223
  node 6 size: 258039 MB
  node 6 free: 257693 MB
  node 7 cpus: 224-255
  node 7 size: 250037 MB
  node 7 free: 249605 MB
  node 8 cpus: 256-287
  node 8 size: 258039 MB
  node 8 free: 257711 MB
  node 9 cpus: 288-319
  node 9 size: 250037 MB
  node 9 free: 249743 MB
  node 10 cpus: 320-351
  node 10 size: 258039 MB
  node 10 free: 257751 MB
  node 11 cpus: 352-383
  node 11 size: 250037 MB
  node 11 free: 249739 MB
  node 12 cpus: 384-415
  node 12 size: 258039 MB
  node 12 free: 257688 MB
  node 13 cpus: 416-447
  node 13 size: 250037 MB
  node 13 free: 249712 MB
  node 14 cpus: 448-479
  node 14 size: 258039 MB
  node 14 free: 257715 MB
  node 15 cpus: 480-511
  node 15 size: 250037 MB
  node 15 free: 249746 MB
  node 16 cpus: 512-543
  node 16 size: 258039 MB
  node 16 free: 257426 MB
  node 17 cpus: 544-575
  node 17 size: 250037 MB
  node 17 free: 248461 MB
  node 18 cpus: 576-607
  node 18 size: 258039 MB
  node 18 free: 257518 MB
  node 19 cpus: 608-639
  node 19 size: 250037 MB
  node 19 free: 247669 MB
  node 20 cpus: 640-671
  node 20 size: 258039 MB
  node 20 free: 256859 MB
  node 21 cpus: 672-703
  node 21 size: 250037 MB
  node 21 free: 246136 MB
  node 22 cpus: 704-735
  node 22 size: 258000 MB
  node 22 free: 257533 MB
  node 23 cpus: 736-767
  node 23 size: 248967 MB
  node 23 free: 248421 MB
  node distances:
```

(Continued on next page)

Platform Notes (Continued)

```
 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:       6241020784 kB

------------------------------------------------------------
10. who -r
  run-level 3 Mar 13 08:55

------------------------------------------------------------
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 cxl-monitor debug-shell ebtables 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 nfsserver 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
```

(Continued on next page)

Platform Notes (Continued)

```
  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 709:
    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+madvise [madvise] never
  enabled         [always] madvise 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_new_vish
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p2 xfs   1.5T  843G  647G  57% /

------------------------------------------------------------
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       | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
```

(Continued on next page)

Compiler Version Notes (Continued)

```
        | 657.xz_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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------------------------------------------------------------------------------------------------------------------------

========================================================================================================================
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 2025.2.0 Build 20250605
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------------------------------------------------------------------------------------------------------------------------

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

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -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 -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fdelayed-template-parsing -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xsapphirerapids -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

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

(Continued on next page)

Peak Optimization Flags (Continued)

600.perlbench_s (continued):
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-fno-strict-aliasing -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 -xsapphirerapids -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:

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-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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