Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen11
(2.70 GHz, Intel Xeon Platinum 8458P)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>326</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
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CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

<table>
<thead>
<tr>
<th>Threads</th>
<th>603.bwaves_s 88</th>
<th>607.cactuBSSN_s 88</th>
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<tr>
<td></td>
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</table>

SPECspeed®2017_fp_base (326)  SPECspeed®2017_fp_peak (326)

**Hardware**

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon Platinum 8458P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max MHz:</td>
<td>3800</td>
</tr>
<tr>
<td>Nominal:</td>
<td>2700</td>
</tr>
<tr>
<td>Enabled:</td>
<td>88 cores, 2 chips</td>
</tr>
<tr>
<td>Orderable:</td>
<td>1, 2 chip(s)</td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 48 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>2 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>82.5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)</td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 900 GB SATA SSD</td>
</tr>
<tr>
<td>Other:</td>
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</table>

**Software**

<table>
<thead>
<tr>
<th>OS:</th>
<th>Red Hat Enterprise Linux release 9.0 (Plow)</th>
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<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2022.1 of Intel Fortran Compiler for Linux</td>
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<tr>
<td>Parallel:</td>
<td>Yes</td>
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<tr>
<td>Firmware:</td>
<td>HPE BIOS Version v1.22 01/18/2023 released</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Other: jemalloc memory allocator V5.0.1</td>
<td></td>
</tr>
<tr>
<td>Power Management: BIOS and OS set to prefer performance at the cost of additional power usage</td>
<td></td>
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</tbody>
</table>
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen11  
(2.70 GHz, Intel Xeon Platinum 8458P)  

SPECspeed\textsuperscript{\textregistered}2017_fp_base = 326  
SPECspeed\textsuperscript{\textregistered}2017_fp_peak = 326

Results Table

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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
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<tr>
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<td>607.cactuBSSN_s</td>
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<td>410</td>
<td>38.4</td>
<td>410</td>
<td>38.3</td>
<td>411</td>
</tr>
</tbody>
</table>

Submit Notes

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages enabled by default  
Prior to runcpu invocation  
Filesystem page cache synced and cleared with:  
 sync; echo 3> /proc/sys/vm/drop_caches  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>  
tuned-adm profile was set to Throughput-Performance using "tuned-adm profile throughput-performance"

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"  
MALLOC_CONF = "retain:true"  
OMP_STACKSIZE = "192M"
SPEC CPU®2017 Floating Point Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen11
(2.70 GHz, Intel Xeon Platinum 8458P)

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Platform Notes

The system ROM used for this result contains Intel microcode version 0x2b000161 for the Intel Xeon Platinum 8458P processor.
The reported date by sysinfo is incorrect due to computer clock being not set correctly.
The correct test date is: Mar-2023.

BIOS Configuration:
Workload Profile set to General Peak Frequency Compute
Thermal Configuration set to Maximum Cooling
Intel Hyper-Threading set to Disabled
Memory Patrol Scrubbing set to Disabled
Last Level Cache (LLC) Prefetch set to Enabled
Last Level Cache (LLC) Dead Line Allocation set to Disabled
Enhanced Processor Performance Profile set to Aggressive
Dead Block Predictor set to Enabled
Workload Profile set to Custom
Intel DMI Link Frequency set to Gen2 Speed
Adjacent Sector Prefetch set to Disabled
Minimum Processor Idle Power Package C-State set to No Package State

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Thu Apr 7 05:30:55 2022

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

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1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry

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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen11
(2.70 GHz, Intel Xeon Platinum 8458P)

SPECspeed®2017_fp_base = 326
SPECspeed®2017_fp_peak = 326

Platform Notes (Continued)

6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. uname -a
   Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022
   x86_64 x86_64 GNU/Linux

2. w
   05:30:55 up 0 min, 0 users, load average: 0.89, 0.34, 0.12
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT

3. Username
   From environment variable $USER: root

4. ulimit -a
   real-time non-blocking time (microseconds, -R) unlimited
   core file size (blocks, -c) 0
   data seg size (kbytes, -d) unlimited
   scheduling priority (-e) 0
   file size (blocks, -f) unlimited
   pending signals (-i) 4127196
   max locked memory (kbytes, -l) 64
   max memory size (kbytes, -m) unlimited
   open files (-n) 1024
   pipe size (512 bytes, -p) 8
   POSIX message queues (bytes, -q) 819200

(Continued on next page)
Hewlett Packard Enterprise  
ProLiant DL380 Gen11  
(2.70 GHz, Intel Xeon Platinum 8458P)

SPECspeed®2017_fp_base = 326  
SPECspeed®2017_fp_peak = 326

Platform Notes (Continued)

real-time priority  (-r) 0
stack size  (kbytes, -s) unlimited
cpu time  (seconds, -t) unlimited
max user processes  (-u) 4127196
virtual memory  (kbytes, -v) unlimited
file locks  (-x) unlimited

5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@notty
bash -c cd $SPEC/ & $SPEC/fpspeed.sh
runcpu --nobuild --action validate --define default-platform-flags -c
   ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=88 --tune base,peak --o all --define drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
   --note-preenv --logfile $SPEC/tmp/CPUspeed.001/templogs/preenv.fpspeed.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) Platinum 8458P
   vendor_id : GenuineIntel
   cpu family : 6
   model : 143
   stepping : 6
   microcode : 0x2b000161
   bugs : spectre_v1 spectre_v2 spec_store_bypass swaps
   cpu cores : 44
   siblings : 44
   2 physical ids (chips)
   88 processors (hardware threads)
   physical id 0: core ids 0-43
   physical id 1: core ids 0-43
   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, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86
   physical id 1: apicids
   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, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for

(Continued on next page)
### Platform Notes (Continued)

virtualized systems. Use the above data carefully.

7. lscpu

From lscpu from util-linux 2.37.4:

<table>
<thead>
<tr>
<th>Architecture:</th>
<th>x86_64</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU op-mode(s):</td>
<td>32-bit, 64-bit</td>
</tr>
<tr>
<td>Address sizes:</td>
<td>46 bits physical, 57 bits virtual</td>
</tr>
<tr>
<td>Byte Order:</td>
<td>Little Endian</td>
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<tr>
<td>CPU(s):</td>
<td>88</td>
</tr>
<tr>
<td>On-line CPU(s) list:</td>
<td>0-87</td>
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<tr>
<td>Vendor ID:</td>
<td>GenuineIntel</td>
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<tr>
<td>BIOS Vendor ID:</td>
<td>Intel(R) Corporation</td>
</tr>
<tr>
<td>Model name:</td>
<td>Intel(R) Xeon(R) Platinum 8458P</td>
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<tr>
<td>BIOS Model name:</td>
<td>Intel(R) Xeon(R) Platinum 8458P</td>
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<tr>
<td>CPU family:</td>
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<td>Model:</td>
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</tr>
<tr>
<td>Thread(s) per core:</td>
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<tr>
<td>Core(s) per socket:</td>
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<tr>
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<tr>
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<tr>
<td>BogoMIPS:</td>
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</tr>
</tbody>
</table>

Flags:

```
fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
lahf_lm abm 3dnowprefetch cpuid_fault epb cat_13 cat_12 cdtp13
invcpcid_single cdtp12 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2
erms invpcid cmqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
ciflushopt ctw intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xsaves
xgetbv1 xsaves cqm _llc cqm _occup _llc cqm _mbm _total cqm _mbm _local
split_lock _detect avx _vnmi avx512_bf16 wbo invd dtherm ida arat pln pts
avx512vbmi umip pku ospke waitpkg avx512vbmi2 gfnl vaes vpclmulqdq
avx512_vnni avx512_vbitalg tme avx512_vpopcntdq l57 rdpid bus_lock _detect
cldemote movdiri movdir64b enqcmd fmm clear serialize tsxidtrk pconfign
arch_hdr avx512_fp16 amx_tile flush_lld arch_capabilities
```

Virtualization: VT-x

| L1d cache: | 4.1 MiB (88 instances) |
| L1i cache: | 2.8 MiB (88 instances) |
| L2 cache: | 176 MiB (88 instances) |
| L3 cache: | 165 MiB (2 instances) |
| NUMA node(s): | 2 |
| NUMA node0 CPU(s): | 0-21,44-65 |

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## SPEC CPU®2017 Floating Point Speed Result

**Hewlett Packard Enterprise**  
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**ProLiant DL380 Gen11**  
(2.70 GHz, Intel Xeon Platinum 8458P)  

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<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>326</td>
<td>326</td>
</tr>
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</table>

**CPU2017 License:** 3  
**Test Date:** Mar-2023  
**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Hardware Availability:** Jan-2023  
**Tested by:** HPE  
**Software Availability:** May-2022

### Platform Notes (Continued)

**NUMA node1 CPU(s):** 22-43,66-87  
**Vulnerability Itlb multihit:** Not affected  
**Vulnerability L1tf:** Not affected  
**Vulnerability Mds:** Not affected  
**Vulnerability Meltdown:** 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 IBRS, IBFB conditional, RSB filling  
**Vulnerability Srbds:** Not affected  
**Vulnerability Tsx async abort:** Not affected

From `lscpu --cache`:

<table>
<thead>
<tr>
<th>NAME ONE-SIZE ALL-SIZE WAYS TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
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</thead>
<tbody>
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<td>4.1M</td>
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<tr>
<td>L1i</td>
<td>32K</td>
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<td>8 Instruction</td>
<td>1</td>
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<tr>
<td>L2</td>
<td>2M</td>
<td>176M</td>
<td>16 Unified</td>
<td>2</td>
</tr>
<tr>
<td>L3</td>
<td>82.5M</td>
<td>165M</td>
<td>15 Unified</td>
<td>3</td>
</tr>
</tbody>
</table>

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

8. `numactl --hardware`

```bash
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 2 nodes (0-1)
node 0 cpus: 0-21,44-65
node 0 size: 515762 MB
node 0 free: 514490 MB
node 1 cpus: 22-43,66-87
node 1 size: 516075 MB
node 1 free: 514666 MB
node distances:
node 0 1
0: 10 20
1: 20 10
```

9. `/proc/meminfo`

```bash
MemTotal: 1056602704 kB
```

10. `who -r`

```
run-level 3 Apr 7 05:30
```

11. `systemd service manager version: systemd 250 (250-6.e19_0)`

<table>
<thead>
<tr>
<th>Default Target Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>multi-user running</td>
</tr>
</tbody>
</table>

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SPEC CPU®2017 Floating Point Speed Result

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(2.70 GHz, Intel Xeon Platinum 8458P)

SPECspeed®2017_fp_base = 326
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<tr>
<th>CPU2017 License</th>
<th>3</th>
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<tbody>
<tr>
<td>Test Sponsor</td>
<td>HPE</td>
</tr>
<tr>
<td>Tested by</td>
<td>HPE</td>
</tr>
<tr>
<td>Test Date</td>
<td>Mar-2023</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Jan-2023</td>
</tr>
<tr>
<td>Software Availability</td>
<td>May-2022</td>
</tr>
</tbody>
</table>

Platform Notes (Continued)

12. Services, from systemctl list-unit-files

<table>
<thead>
<tr>
<th>STATE</th>
<th>UNIT FILES</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond dbus-broker firewallld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode nis-domainname rhmcertd rsyslog selinux-autorelabel-mark sshd ssd systemd-network-generator tuned udisks2 upower</td>
</tr>
<tr>
<td>enabled-runtime</td>
<td>systemd-remount-fs</td>
</tr>
<tr>
<td>disabled</td>
<td>blk-availability canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell hwloc-dump-hwdata kvm_stat man-db-restart-cache-update nftables powertop rdisc rhsm rhsm-facts rpmdb-rebuild serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext</td>
</tr>
<tr>
<td>indirect</td>
<td>sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo</td>
</tr>
</tbody>
</table>

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

BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap

14. cpupower frequency-info

analyzing CPU 0:
Unable to determine current policy
boost state support:
   Supported: yes
   Active: yes

15. tuned-adm active

Current active profile: throughput-performance

16. sysctl

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>kernel numa_balancing</td>
<td>1</td>
</tr>
<tr>
<td>kernel randomize va space</td>
<td>2</td>
</tr>
<tr>
<td>vm compaction proactiveness</td>
<td>20</td>
</tr>
<tr>
<td>vm dirty background bytes</td>
<td>0</td>
</tr>
<tr>
<td>vm dirty background ratio</td>
<td>10</td>
</tr>
<tr>
<td>vm dirty bytes</td>
<td>0</td>
</tr>
<tr>
<td>vm dirty expire centisecs</td>
<td>3000</td>
</tr>
<tr>
<td>vm dirty ratio</td>
<td>40</td>
</tr>
<tr>
<td>vm dirty writeback centisecs</td>
<td>500</td>
</tr>
<tr>
<td>vm dirtytime expire seconds</td>
<td>43200</td>
</tr>
</tbody>
</table>

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL380 Gen11
(2.70 GHz, Intel Xeon Platinum 8458P)

SPECspeed®2017_fp_base = 326
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CPU2017 License: 3
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Platform Notes (Continued)

vm.extfrag_threshold 500
vm.min_unmapped_ratio 1
vm.nr_hugepages 0
vm.nr_hugepages_mempolicy 0
vm.nr_overcommit_hugepages 0
vm.swappiness 10
vm.watermark_boost_factor 15000
vm.watermark_scale_factor 10
vm.zone_reclaim_mode 0

------------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage
   defrag always defer 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 Red Hat Enterprise Linux 9.0 (Plow)
   redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
   system-release Red Hat Enterprise Linux release 9.0 (Plow)

------------------------------------------------------------
20. Disk information
   SPEC is set to: /home/cpu2017
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/mapper/rhel-home xfs 819G 158G 662G 20% /home

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
   Vendor: HPE
   Product: ProLiant DL380 Gen11
   Product Family: ProLiant
   Serial: CNX21000G7

(Continued on next page)
22. dmidecode
Additional information from dmidecode 3.3 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:
  16x Samsung M321R8GA0BB0-CQKDG 64 GB 2 rank 4800

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor: HPE
  BIOS Version: 1.22
  BIOS Date: 01/18/2023
  BIOS Revision: 1.22
  Firmware Revision: 1.30

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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
==============================================================================
C++, C, Fortran | 607.cactuBSSN_s(base, peak)
==============================================================================
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
==============================================================================
Fortran         | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
(Continued on next page)
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL380 Gen11  
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**SPECspeed®2017_fp_base = 326**

**SPECspeed®2017_fp_peak = 326**

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**Compiler Version Notes (Continued)**

<table>
<thead>
<tr>
<th>654.roms_s(base, peak)</th>
</tr>
</thead>
</table>

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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

---

==============================================================================
Fortran, C | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)
==============================================================================

---

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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
- 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

(Continued on next page)
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Base Portability Flags (Continued)

644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -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:
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Benchmarks using Fortran, C, and C++:
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak 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
Hewlett Packard Enterprise
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Software Availability: May-2022

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: -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -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

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++:

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-SPR-rev1.1.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-SPR-rev1.1.xml
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| CPU2017 License:   | 3   |
| Test Sponsor:      | HPE |
| Tested by:         | HPE |

| Test Date:         | Mar-2023 |
| Hardware Availability: | Jan-2023 |
| Software Availability: | May-2022 |

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Tested with SPEC CPU®2017 v1.1.9 on 2022-04-06 20:00:54-0400.  
Report generated on 2023-03-29 18:07:43 by CPU2017 PDF formatter v6442.  
Originally published on 2023-03-29.