



SPEC CPU®2017 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL340 Gen12

(2.70 GHz, Intel Xeon 6747P)

SPECspeed®2017_fp_base = 298

SPECspeed®2017_fp_peak = 298

CPU2017 License: 3

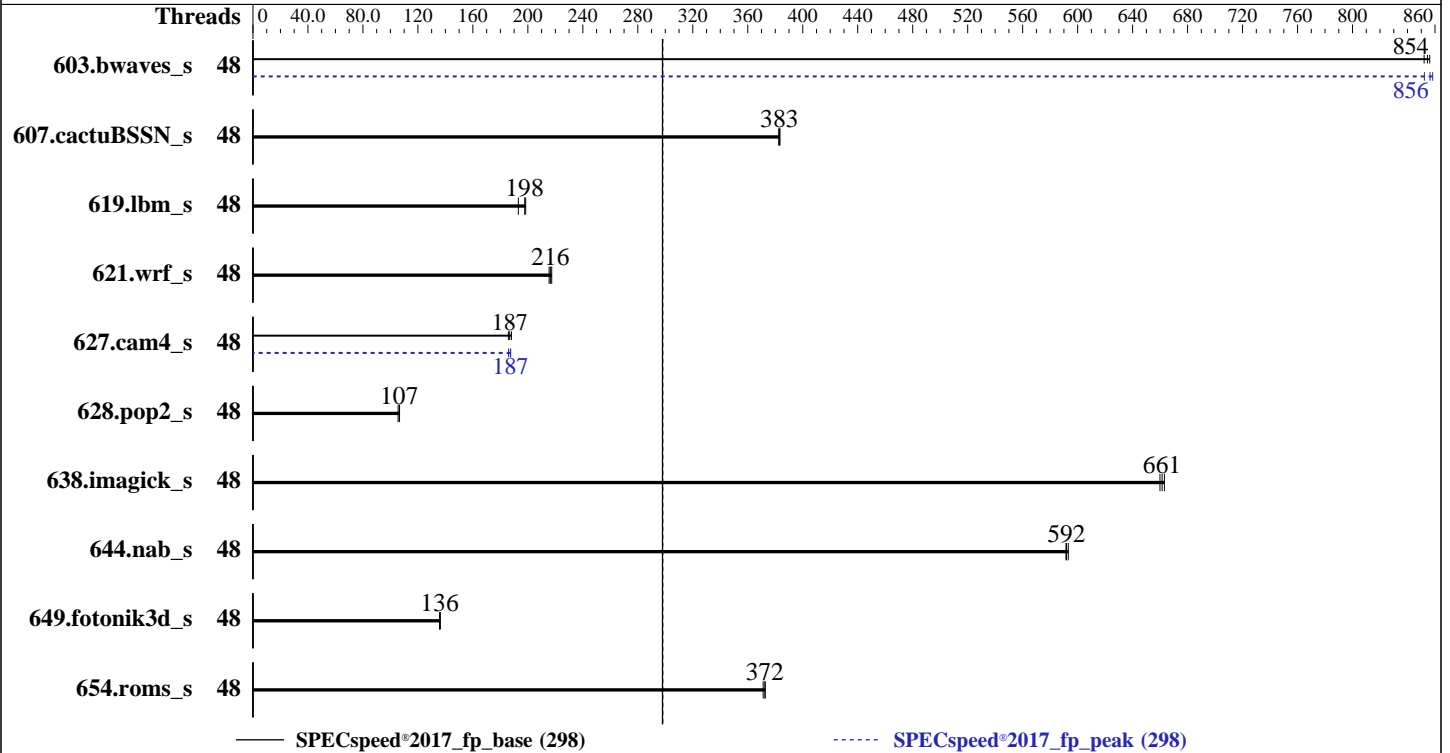
Test Sponsor: HPE

Tested by: HPE

Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024



Hardware

CPU Name: Intel Xeon 6747P
 Max MHz: 3900
 Nominal: 2700
 Enabled: 48 cores, 1 chip
 Orderable: 1 Chip
 Cache L1: 64 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 288 MB I+D on chip per chip
 Other: None
 Memory: 256 GB (8 x 32 GB 2Rx8 PC5-6400B-R)
 Storage: 1 x 1.2 TB NVMe SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6
 Kernel 6.4.0-150600.21-default
 Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
 Parallel: Yes
 Firmware: HPE BIOS Version v1.20 02/14/2025 released Feb-2025
 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 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	48	68.9	856	<u>69.0</u>	<u>854</u>	69.2	852	48	69.2	852	68.7	858	<u>68.9</u>	<u>856</u>
607.cactuBSSN_s	48	43.5	383	43.6	383	<u>43.5</u>	<u>383</u>	48	43.5	383	43.6	383	<u>43.5</u>	<u>383</u>
619.lbm_s	48	26.4	198	27.1	193	<u>26.5</u>	<u>198</u>	48	26.4	198	27.1	193	<u>26.5</u>	<u>198</u>
621.wrf_s	48	60.8	217	61.4	215	<u>61.1</u>	<u>216</u>	48	60.8	217	61.4	215	<u>61.1</u>	<u>216</u>
627.cam4_s	48	47.7	186	47.1	188	<u>47.5</u>	<u>187</u>	48	47.7	186	47.3	188	<u>47.3</u>	<u>187</u>
628.pop2_s	48	111	107	112	106	<u>111</u>	<u>107</u>	48	111	107	112	106	<u>111</u>	<u>107</u>
638.imagick_s	48	<u>21.8</u>	<u>661</u>	21.8	663	21.9	660	48	<u>21.8</u>	<u>661</u>	21.8	663	21.9	660
644.nab_s	48	<u>29.5</u>	<u>592</u>	29.5	592	29.5	593	48	<u>29.5</u>	<u>592</u>	29.5	592	29.5	593
649.fotonik3d_s	48	<u>67.1</u>	<u>136</u>	67.2	136	66.9	136	48	<u>67.1</u>	<u>136</u>	67.2	136	66.9	136
654.roms_s	48	42.2	373	<u>42.3</u>	<u>372</u>	42.4	371	48	42.2	373	<u>42.3</u>	<u>372</u>	42.4	371

SPECspeed®2017_fp_base = **298**

SPECspeed®2017_fp_peak = **298**

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,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>



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Platform Notes

BIOS Configuration:

Workload Profile set to General Peak Frequency Compute
Memory Patrol Scrubbing set to Disabled
Thermal Configuration set to Maximum Cooling
Enhanced Processor Performance Profile set to Aggressive
Sub-NUMA Clustering (SNC) set to Enabled
Last Level Cache (LLC) Prefetch set to Enabled
Intel Hyper-Threading set to Disabled
Minimum Processor Idle Power Core C-State set to C6 as ACPI C3 State
Workload Profile set to Custom
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 Mon Mar 31 06:15:51 2025

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

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3. Username
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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 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

```
1. uname -a
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)
x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
06:15:51 up 1 min, 3 users, load average: 0.16, 0.07, 0.02
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU      WHAT
```

```
3. Username
From environment variable $USER: root
```

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Platform Notes (Continued)

```

4. ulimit -a
   core file size          (blocks, -c) unlimited
   data seg size          (kbytes, -d) unlimited
   scheduling priority     (-e) 0
   file size              (blocks, -f) unlimited
   pending signals        (-i) 1030743
   max locked memory      (kbytes, -l) 8192
   max memory size        (kbytes, -m) unlimited
   open files             (-n) 1024
   pipe size              (512 bytes, -p) 8
   POSIX message queues   (bytes, -q) 819200
   real-time priority     (-r) 0
   stack size             (kbytes, -s) unlimited
   cpu time               (seconds, -t) unlimited
   max user processes     (-u) 1030743
   virtual memory         (kbytes, -v) unlimited
   file locks             (-x) unlimited

```

```

5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize=31
   sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
   sshd: root [priv]
   sshd: root@notty
   bash -c cd $SPEC/ && $SPEC/fpspeedsprsmtoff.sh
   runcpu --nobuild --action validate --define default-platform-flags -c
     ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=48 --tune base,peak -o all --define
     drop_caches fpspeed
   runcpu --nobuild --action validate --define default-platform-flags --configfile
     ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=48 --tune base,peak --output_format all
     --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
     --note-preenv --logfile $SPEC/tmp/CPU2017.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0
     --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /home/cpu2017

```

```

6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) 6747P
   vendor_id      : GenuineIntel
   cpu family     : 6
   model          : 173
   stepping       : 1
   microcode      : 0x1000380
   bugs           : spectre_v1 spectre_v2 spec_store_bypass swaps bhi
   cpu cores      : 48
   siblings       : 48
   1 physical ids (chips)
   48 processors (hardware threads)
   physical id 0: core ids 0-23,64-87
   physical id 0: apicids
   0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,128,130,132,134,136,138,140,142,144,14
   6,148,150,152,154,156,158,160,162,164,166,168,170,172,174
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems. Use the above data carefully.

```

```

7. lscpu

From lscpu from util-linux 2.39.3:

```

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Platform Notes (Continued)

```

Architecture:                x86_64
CPU op-mode(s):              32-bit, 64-bit
Address sizes:               46 bits physical, 57 bits virtual
Byte Order:                  Little Endian
CPU(s):                      48
On-line CPU(s) list:        0-47
Vendor ID:                   GenuineIntel
BIOS Vendor ID:              Intel(R) Corporation
Model name:                  Intel(R) Xeon(R) 6747P
BIOS Model name:             Intel(R) Xeon(R) 6747P  CPU @ 2.7GHz
BIOS CPU family:             179
CPU family:                  6
Model:                      173
Thread(s) per core:         1
Core(s) per socket:         48
Socket(s):                   1
Stepping:                    1
BogoMIPS:                    5400.00
Flags:                        fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
                             pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx
                             pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good
                             nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni
                             pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
                             xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt
                             tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm
                             3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 intel_ppin cdp_l2
                             ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept
                             vpid ept_ad fsgsbase tsc_adjust bmil 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 hfi vnmi avx512vbmi umip pku ospke waitpkg avx512_vbmi2
                             gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpocntdq
                             la57 rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm
                             md_clear serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16
                             amx_tile amx_int8 flush_l1d arch_capabilities

Virtualization:              VT-x
L1d cache:                   2.3 MiB (48 instances)
L1i cache:                   3 MiB (48 instances)
L2 cache:                    96 MiB (48 instances)
L3 cache:                    288 MiB (1 instance)
NUMA node(s):                2
NUMA node0 CPU(s):          0-23
NUMA node1 CPU(s):          24-47
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:  Not affected
Vulnerability Lltf:          Not affected
Vulnerability Mds:           Not affected
Vulnerability Meltdown:      Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Reg file data sampling: Not affected
Vulnerability Retbleed:       Not affected
Vulnerability Spec rstack overflow: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1:     Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:     Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling;
                             PBRSE-eIBRS Not affected; BHI BHI_DIS_S

Vulnerability Srbds:          Not affected
Vulnerability Tsx async abort: Not affected

```

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Platform Notes (Continued)

From `lscpu --cache:`

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	2.3M	12	Data	1	64	1	64
L1i	64K	3M	16	Instruction	1	64	1	64
L2	2M	96M	16	Unified	2	2048	1	64
L3	288M	288M	16	Unified	3	294912	1	64

8. `numactl --hardware`

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

```

available: 2 nodes (0-1)
node 0 cpus: 0-23
node 0 size: 128706 MB
node 0 free: 128318 MB
node 1 cpus: 24-47
node 1 size: 129004 MB
node 1 free: 127857 MB
node distances:
node  0  1
  0:  10  12
  1:  12  10

```

9. `/proc/meminfo`

MemTotal: 263895788 kB

10. `who -r`

run-level 3 Mar 31 06:15

11. Systemd service manager version: `systemd 254 (254.10+suse.84.ge8d77af424)`

```

Default Target  Status
multi-user      running

```

12. Services, from `systemctl list-unit-files`

```

STATE      UNIT FILES
enabled    apparmor auditd cron getty@ irqbalance issue-generator kbdsettings nvme-fc-boot-connections
           nvme-f-autoconnect postfix purge-kernels rollback sshd systemd-pstore wicked wickedd-auto4
           wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime  systemd-remount-fs
disabled         boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell grub2-once
           haveged hwloc-dump-hwdata issue-add-ssh-keys kexec-load rpmconfigcheck serial-getty@
           systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysext
           systemd-time-wait-sync systemd-timesyncd
indirect      systemd-userdbd wickedd

```

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

```

BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
root=UUID=2a556383-22da-44ff-afaf-35fc3a69bfa6
splash=silent
resume=/dev/disk/by-uuid/288d2489-1f86-416e-b1e3-5c25ecb851eb
quiet
security=apparmor
mitigations=auto

```

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Platform Notes (Continued)

14. cpupower frequency-info

```
analyzing CPU 30:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes
```

15. sysctl

```
kernel.numa_balancing          1
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
```

16. /sys/kernel/mm/transparent_hugepage

```
defrag          always defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size  2097152
shmem_enabled   always within_size advise [never] deny force
```

17. /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
```

18. OS release

```
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP6
```

19. Disk information

```
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p3  xfs   947G  135G  812G  15% /home
```

20. /sys/devices/virtual/dmi/id

```
Vendor: HPE
```

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Platform Notes (Continued)

Product: HPE ProLiant Compute DL340 Gen12
Product Family: ProLiant
Serial: 5MXSH46K47

21. dmidecode

Additional information from dmidecode 3.4 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:

8x Hynix HMC88AHBRA471N 32 GB 2 rank 6400

22. BIOS

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

BIOS Vendor: HPE
BIOS Version: 1.20
BIOS Date: 02/14/2025
BIOS Revision: 1.20
Firmware Revision: 1.11

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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

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

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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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.ibm_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

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 -xsaphirerapids -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 -xsaphirerapids -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 -xsaphirerapids -Ofast -ffast-math

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SPEC CPU®2017 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL340 Gen12

(2.70 GHz, Intel Xeon 6747P)

SPECspeed®2017_fp_base = 298

SPECspeed®2017_fp_peak = 298

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

```
-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 -xsapphirerapids -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

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

(Continued on next page)



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Hardware Availability: Mar-2025

Software Availability: Jun-2024

Peak Optimization Flags (Continued)

644.nab_s: basepeak = yes

Fortran benchmarks:

```
603.bwaves_s: -w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids
-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: -w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -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
```

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-GNR-rev1.1.html>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-GNR-rev1.1.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

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