# SPEC CPU®2017 Integer Rate Result

## Hewlett Packard Enterprise

**Test Sponsor:** HPE  
**ProLiant ML350 Gen11**  
(2.30 GHz, Intel Xeon Platinum 8568Y+)

| SPECrate®2017_int_base = 916 | SPECrate®2017_int_peak = 945 |

### CPU2017 License: 3  
**Test Date:** Feb-2024  
**Test Sponsor:** HPE  
**Hardware Availability:** Feb-2024  
**Software Availability:** Dec-2023

| CPU Name: Intel Xeon Platinum 8568Y+  
**Max MHz:** 4000  
**Nominal:** 2300  
**Enabled:** 96 cores, 2 chips, 2 threads/core  
**Orderable:** 1, 2 chip(s)  
**Cache L1:** 32 KB I + 48 KB D on chip per core  
**L2:** 2 MB I+D on chip per core  
**L3:** 300 MB I+D on chip per chip  
**Other:** None  
**Memory:** 512 GB (16 x 32 GB 2Rx8 PC5-5600B-R)  
**Storage:** 1 x 480 GB SATA SSD  
**Other:** Cooling: Air |

### Software

- **OS:** SUSE Linux Enterprise Server 15 SP5  
  Kernel 5.14.21-150500.53-default  
- **Compiler:**  
  C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;  
  Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
- **Parallel:** No  
- **Firmware:** HPE BIOS Version v2.12 12/13/2023 released Dec-2023  
- **File System:** btrfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other:** jemalloc memory allocator V5.0.1  
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage

### Hardware

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copies</td>
<td>0</td>
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<tr>
<td>perlbench</td>
<td>192</td>
</tr>
<tr>
<td>gcc</td>
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</tr>
<tr>
<td>mcf</td>
<td>192</td>
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<tr>
<td>omnetpp</td>
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</tr>
<tr>
<td>xalancbmk</td>
<td>192</td>
</tr>
<tr>
<td>x264</td>
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<td>deepsjeng</td>
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<tr>
<td>leela</td>
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<tr>
<td>exchange2</td>
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</tbody>
</table>
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(Test Sponsor: HPE)  
ProLiant ML350 Gen11  
(2.30 GHz, Intel Xeon Platinum 8568Y+)

SPEC CPU 2017 Integer Rate Result

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Test Date: Feb-2024  
Hardware Availability: Feb-2024  
Software Availability: Dec-2023

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>452</td>
<td>458</td>
<td>452</td>
<td>458</td>
<td>451</td>
<td>460</td>
</tr>
</tbody>
</table>

SPECrate®2017_int_base = 916  
SPECrate®2017_int_peak = 945

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

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

Operating System Notes

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

Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD_LIBRARY_PATH = */home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/je5.0.1-32*  
MALLOC_CONF = "retain:true"

General Notes

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

(Continued on next page)
General Notes (Continued)

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 0x21000200 for
the Intel Xeon Platinum 8568Y+ processor.

BIOS Configuration:
Workload Profile set to General Throughput Compute
Memory Patrol Scrubbing set to Disabled
Last Level Cache (LLC) Dead Line Allocation set to Disabled
Enhanced Processor Performance Profile set to Aggressive
Thermal Configuration set to Maximum Cooling
Intel UPI Link Enablement set to Single Link Operation
Workload Profile set to Custom
DCU Stream Prefetcher set to Disabled
Adjacent Sector Prefetch set to Disabled
Intel UPI Link Power Management set to Enabled

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Fri Feb 16 05:18:50 2024

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

-------------------------------------------------------------------
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 249 (249.16+suse.171.gdad0071f15)
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. systemctl
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 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
x86_64 x86_64 x86_64 GNU/Linux

(Continued on next page)
Platform Notes (Continued)

2. 05:18:50 up 3 min, 0 users, load average: 0.01, 0.03, 0.00

USER    TTY     FROM       LOGIN@    IDLE     JCPU   PCPU WHAT
------------------------------------------------------------
3. Username
From environment variable $USER: root

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    (-l) 2062581
   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
   real-time priority  (-r) 0
   cpu time           (seconds, -t) unlimited
   max user processes  (-u) 2062581
   virtual memory     (kbytes, -v) unlimited
   file locks         (-x) unlimited

5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 29
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root@notty
bash -c cd $SPEC/ && $SPEC/intrateTP.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=192 --c
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=96 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.intrate.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 8568Y+
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 207
   stepping        : 2
   microcode       : 0x21000200
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swaps eibrs_pbrsb
   cpu cores       : 48
   siblings        : 96
   2 physical ids (chips)
   192 processors (hardware threads)
   physical id 0: core ids 0-47

(Continued on next page)
Platform Notes (Continued)

    physical id 1: core ids 0-47
    physical id 0: apicids 0-95
    physical id 1: apicids 128-223

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 2.37.4:
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): 192
On-line CPU(s) list: 0-191
Vendor ID: GenuineIntel
Model name: INTEL(R) XEON(R) PLATINUM 8568Y+
CPU family: 6
Model: 207
Thread(s) per core: 2
Core(s) per socket: 48
Socket(s): 2
Stepping: 2
BogoMIPS: 4600.00
Flags:
    fpu vme de pse tsc msr pae mce cmov pat pse36
    clflush dtc acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb
    rdtsscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology
    nonstop_tsc tsc_deadline_timer aes xsave avx f16c rdrand
    lahf_lm abm 3mos6prefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
    invvpicid_single cdp_l2 ssbb mba ibrs ibp ibrs_inh ibrs_enhanced
tp_msr intel_pstate cope IPV6 mce cmpxchg32b mcm智力 cpb
    bus_lock_detect

Virtualization:
    VT-x
L1d cache:
    4.5 MiB (96 instances)
    3 MiB (96 instances)
    1.2 MiB (96 instances)
    600 MiB (2 instances)
NUMA node(s):
    0
    23-96-119
NUMA node0 CPU(s):
    0-23,96-119
NUMA node1 CPU(s):
    24-47,120-143
NUMA node2 CPU(s):
    48-71,144-167
NUMA node3 CPU(s):
    72-95,168-191
Vulnerability Itlb multihit: Not affected
Vulnerability L1t: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swappgs barriers and __user pointer sanitization

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**Hewlett Packard Enterprise**  
**ProLiant ML350 Gen11**  
(2.30 GHz, Intel Xeon Platinum 8568Y+)

**SPEC CPU®2017 Integer Rate Result**

<table>
<thead>
<tr>
<th>Platform Notes (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW sequence</td>
</tr>
<tr>
<td>Vulnerability Srbds: Not affected</td>
</tr>
<tr>
<td>Vulnerability Td async abort: Not affected</td>
</tr>
</tbody>
</table>

From lscpu --cache:

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<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
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<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>4.5M</td>
<td>12</td>
<td>Data</td>
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<td>64</td>
<td>1</td>
<td>64</td>
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<tr>
<td>L1i</td>
<td>32K</td>
<td>3M</td>
<td>8</td>
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<td>L2</td>
<td>2M</td>
<td>192M</td>
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<tr>
<td>L3</td>
<td>300M</td>
<td>600M</td>
<td>20</td>
<td>Unified</td>
<td>3</td>
<td>245760</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

---

8. numactl --hardware

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

available: 4 nodes (0-3)
	node 0 cpus: 0-23,96-119
	node 0 size: 128705 MB
	node 0 free: 128004 MB
	node 1 cpus: 24-47,120-143
	node 1 size: 129011 MB
	node 1 free: 128525 MB
	node 2 cpus: 48-71,144-167
	node 2 size: 128977 MB
	node 2 free: 128421 MB
	node 3 cpus: 72-95,168-191
	node 3 size: 128973 MB
	node 3 free: 128508 MB
	node distances:

<table>
<thead>
<tr>
<th>node</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
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<td>20</td>
</tr>
<tr>
<td>3</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

---

9. /proc/meminfo

MemTotal: 528044332 kB

---

10. who -r

run-level 3 Feb 16 05:17

---

11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)

Default Target Status

multi-user running

---

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>apparmor auditd cron getty@ irqbalance issue-generator kbdsettings lvm2-monitor postfix purge-kernels rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny</td>
</tr>
<tr>
<td>enabled-runtime</td>
<td>systemd-remount-fs</td>
</tr>
<tr>
<td>indirect</td>
<td>wickedd</td>
</tr>
</tbody>
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SPECraten®2017_int_base = 916
SPECraten®2017_int_peak = 945

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

Platform Notes (Continued)

13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
   root=UUID=930f8b53-ff67-403e-9053-e3aad4ef0050
   splash=silent
   mitigations=auto
   quiet
   security=apparmor

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
   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 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+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

(Continued on next page)
<table>
<thead>
<tr>
<th>Platform Notes (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. OS release</td>
</tr>
<tr>
<td>From /etc/<em>-release /etc/</em>-version</td>
</tr>
<tr>
<td>os-release SUSE Linux Enterprise Server 15 SP5</td>
</tr>
<tr>
<td>20. Disk information</td>
</tr>
<tr>
<td>SPEC is set to: /home/cpu2017</td>
</tr>
<tr>
<td>Filesystem     Type   Size  Used Avail Use% Mounted on</td>
</tr>
<tr>
<td>/dev/sda3  btrfs  446G  209G  237G  47% /home</td>
</tr>
<tr>
<td>21. /sys/devices/virtual/dmi/id</td>
</tr>
<tr>
<td>Vendor:         HPE</td>
</tr>
<tr>
<td>Product:        ProLiant ML350 Gen11</td>
</tr>
<tr>
<td>Product Family: ProLiant</td>
</tr>
<tr>
<td>Serial:         CNX20800P4</td>
</tr>
<tr>
<td>22. dmidecode</td>
</tr>
<tr>
<td>Additional information from dmidecode 3.4 follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is &quot;intended to allow hardware to be accurately determined&quot;, but the intent may not be met, as there are frequent changes to hardware, firmware, and the &quot;DMTF SMBIOS&quot; standard.</td>
</tr>
<tr>
<td>Memory:</td>
</tr>
<tr>
<td>16x Hynix HMCG88AGBRA193N 32 GB 2 rank 5600</td>
</tr>
<tr>
<td>23. BIOS</td>
</tr>
<tr>
<td>(This section combines info from /sys/devices and dmidecode.)</td>
</tr>
<tr>
<td>BIOS Vendor:   HPE</td>
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<tr>
<td>BIOS Version:  2.12</td>
</tr>
<tr>
<td>BIOS Date:    12/13/2023</td>
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<tr>
<td>BIOS Revision: 2.12</td>
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<td>Firmware Revision: 1.54</td>
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<th>Compiler Version Notes</th>
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<tr>
<td>C</td>
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<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x Copyright (C) 1985-2023 Intel Corporation. All rights reserved.</td>
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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant ML350 Gen11
(2.30 GHz, Intel Xeon Platinum 8568Y+)

SPEC®CPU2017 Integer Rate Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 916
SPECrate®2017_int_peak = 945

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

Test Date: Feb-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Compiler Version Notes (Continued)

Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

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<th>C</th>
<th>500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base, peak)</th>
</tr>
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------------------------------------------------------------------------------------------------------------------
<p>| C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)       |
|------------------------------------------------------------------------------------------------------------------|
| Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x           |</p>
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<th>Copyright (C) 1985-2023 Intel Corporation. All rights reserved.</th>
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</table>
------------------------------------------------------------------------------------------------------------------
| Fortran | 548.exchange2_r(base, peak)                                                                                   |
|------------------------------------------------------------------------------------------------------------------|
| Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x                  |
| Copyright (C) 1985-2023 Intel Corporation. All rights reserved.                                            |

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64

(Continued on next page)
SPEC CPU®2017 Integer Rate Result

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Base Portability Flags (Continued)

557.xz_r: -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
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

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 -auto
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

Peak Compiler Invocation

C benchmarks:
icx
C++ benchmarks:
icpx
Fortran benchmarks:
ifx

Peak Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64

(Continued on next page)
Hewlett Packard Enterprise
ProLiant ML350 Gen11
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SPECrater®2017_int_base = 916
SPECrater®2017_int_peak = 945

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

Test Date: Feb-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Peak Portability Flags (Continued)

520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:

500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

502.gcc_r: -m32
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc

557.xz_r: basepeak = yes

C++ benchmarks:

520.omnetpp_r: basepeak = yes

(Continued on next page)
# SPEC CPU®2017 InteGER Rate Result

Hewlett Packard Enterprise  
ProLiant ML350 Gen11  
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**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE

**Test Date:** Feb-2024  
**Hardware Availability:** Feb-2024  
**Software Availability:** Dec-2023

### Peak Optimization Flags (Continued)

- 523.xalancbmk_r:basepeak = yes
- 531.deepsjeng_r:basepeak = yes
- 541.leela_r:basepeak = yes

**Fortran benchmarks:**

- 548.exchange2_r: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-EMR-rev1.0.html](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.html)

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

- [http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.xml](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-EMR-rev1.0.xml)

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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