# SPEC CPU®2017 Integer Rate Result



## ASUSTeK Computer Inc.

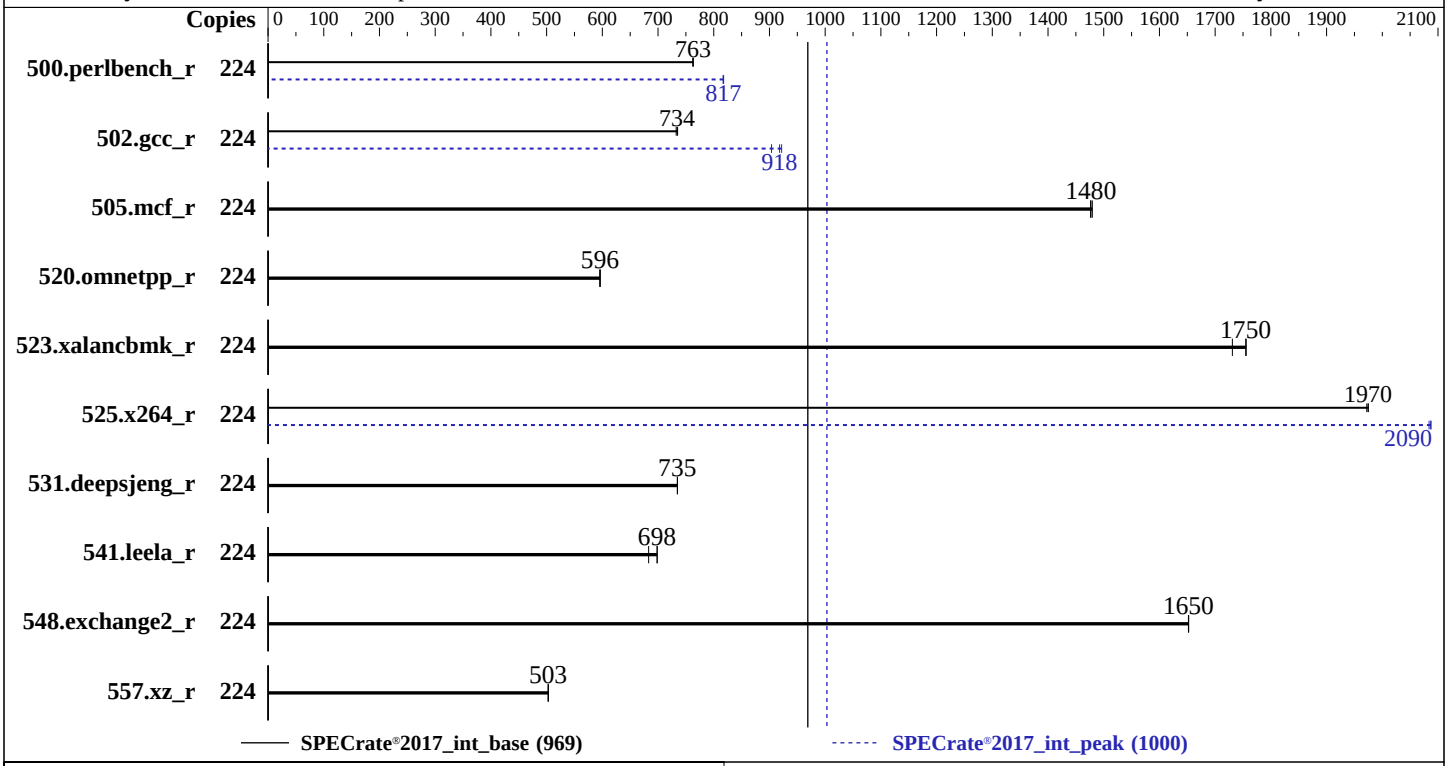
ASUS RS720-E11-RS12U(Z13PP-D32) Server System
(2.00 GHz, Intel Xeon Platinum 8480+)

SPECrate®2017_int_base = 969

SPECrate®2017_int_peak = 1000

**CPU2017 License:** 9016
**Test Sponsor:** ASUSTeK Computer Inc.
**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Jan-2023
**Hardware Availability:** Jan-2023
**Software Availability:** Jun-2022




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon Platinum 8480+ |
| Max MHz: | 3800 |
| Nominal: | 2000 |
| Enabled: | 112 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: | 105 MB I+D on chip per chip |
| Other: | None |
| Memory: | 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R) |
| Storage: | 1 x 1.6 TB PCIE NVME SSD |
| Other: | None |

## Software

| | |
|---|---|
| OS: | SUSE Linux Enterprise Server 15 SP4 (x86_64)<br>Kernel 5.14.21-150400.22-default |
| Compiler: | C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;<br>Fortran: Version 2022.1 of Intel Fortran Compiler for Linux; |
| Parallel: | No |
| Firmware: | Version 0501 released Dec-2022 |
| File System: | xfs |
| 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. |

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 500.perlbench_r | 224 | **467** | **763** | 468 | 763 | 467 | 763 | 224 | 436 | 818 | 436 | 817 | **436** | **817** |
| 502.gcc_r | 224 | 431 | 735 | 433 | 733 | **432** | **734** | 224 | 351 | 904 | 344 | 922 | **345** | **918** |
| 505.mcf_r | 224 | 245 | 1480 | 245 | 1480 | **245** | **1480** | 224 | 245 | 1480 | 245 | 1480 | **245** | **1480** |
| 520.omnetpp_r | 224 | 493 | 596 | 493 | 596 | **493** | **596** | 224 | 493 | 596 | 493 | 596 | **493** | **596** |
| 523.xalancbmk_r | 224 | 137 | 1730 | 135 | 1760 | **135** | **1750** | 224 | 137 | 1730 | 135 | 1760 | **135** | **1750** |
| 525.x264_r | 224 | 199 | 1970 | 199 | 1970 | **199** | **1970** | 224 | 188 | 2080 | 188 | 2090 | **188** | **2090** |
| 531.deepsjeng_r | 224 | **349** | **735** | 349 | 735 | 349 | 735 | 224 | **349** | **735** | 349 | 735 | 349 | 735 |
| 541.leela_r | 224 | 543 | 683 | 531 | 699 | **531** | **698** | 224 | 543 | 683 | 531 | 699 | **531** | **698** |
| 548.exchange2_r | 224 | 355 | 1650 | **355** | **1650** | 355 | 1650 | 224 | 355 | 1650 | **355** | **1650** | 355 | 1650 |
| 557.xz_r | 224 | 481 | 503 | 481 | 503 | **481** | **503** | 224 | 481 | 503 | 481 | 503 | **481** | **503** |

**SPECrate®2017_int_base = 969**

**SPECrate®2017_int_peak = 1000**

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

## Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_s
benchmarks using a priori knowledge of the SPEC code and dataset to perform a
transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4
https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer
publish results using this optimization.

This result is left in the SPEC results database for historical reference.
```

## 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"
OS set to performance mode via cpupower frequency-set -g performance
```

## Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/spec2017/lib/intel64:/spec2017/lib/ia32:/spec2017/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
 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>

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:
VT-d = Disabled
Patrol Scrub = Disabled
SNC = Enable SNC4 (4-clusters)
Engine Boost = Aggressive
SR-IOV Support = Disabled
BMC Configuration:
Fan mode = Full speed mode

 Sysinfo program /spec2017/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on localhost Sun Jan  1 14:05:21 2023

 SUT (System Under Test) info as seen by some common utilities.
 For more information on this section, see
    https://www.spec.org/cpu2017/Docs/config.html#sysinfo

 From /proc/cpuinfo
    model name : Intel(R) Xeon(R) Platinum 8480+
       2  "physical id"s (chips)
       224 "processors"
    cores, siblings (Caution: counting these is hw and system dependent. The following
    excerpts from /proc/cpuinfo might not be reliable.  Use with caution.)
       cpu cores : 56
       siblings  : 112
       physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
       25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
       53 54 55
       physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
       25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
       53 54 55

 From lscpu from util-linux 2.37.2:
      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):                          224
```

**(Continued on next page)**

## Platform Notes (Continued)

```
      On-line CPU(s) list:             0-223
      Vendor ID:                       GenuineIntel
      Model name:                      Intel(R) Xeon(R) Platinum 8480+
      CPU family:                      6
      Model:                           143
      Thread(s) per core:              2
      Core(s) per socket:              56
      Socket(s):                       2
      Stepping:                        8
      CPU max MHz:                     3800.0000
      CPU min MHz:                     800.0000
      BogoMIPS:                        4000.00
      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 invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp
      ibrs_enhanced tpr_shadow vnmi 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 avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp
      hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku ospke waitpkg avx512_vbmi2
      gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
      bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk
      pconfig arch_lbr avx512_fp16 amx_tile flush_l1d arch_capabilities
      Virtualization:                  VT-x
      L1d cache:                       5.3 MiB (112 instances)
      L1i cache:                       3.5 MiB (112 instances)
      L2 cache:                        224 MiB (112 instances)
      L3 cache:                        210 MiB (2 instances)
      NUMA node(s):                    8
      NUMA node0 CPU(s):               0-13,112-125
      NUMA node1 CPU(s):               14-27,126-139
      NUMA node2 CPU(s):               28-41,140-153
      NUMA node3 CPU(s):               42-55,154-167
      NUMA node4 CPU(s):               56-69,168-181
      NUMA node5 CPU(s):               70-83,182-195
      NUMA node6 CPU(s):               84-97,196-209
      NUMA node7 CPU(s):               98-111,210-223
      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 and seccomp
      Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user
      pointer sanitization
      Vulnerability Spectre v2:        Mitigation; Enhanced IBRS, IBPB conditional, RSB
      filling
      Vulnerability Srbds:             Not affected
      Vulnerability Tsx async abort:   Not affected

  From lscpu --cache:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL   SETS PHY-LINE COHERENCY-SIZE
      L1d       48K     5.3M   12 Data            1     64        1             64
      L1i       32K     3.5M    8 Instruction     1     64        1             64
      L2         2M     224M   16 Unified         2   2048        1             64
```

(Continued on next page)

## Platform Notes (Continued)

```
      L3       105M     210M   15 Unified         3 114688        1             64

 /proc/cpuinfo cache data
    cache size : 107520 KB

 From numactl --hardware
 WARNING: a numactl 'node' might or might not correspond to a physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 112 113 114 115 116 117 118 119 120 121
   122 123 124 125
   node 0 size: 128653 MB
   node 0 free: 126819 MB
   node 1 cpus: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 126 127 128 129 130 131 132 133
   134 135 136 137 138 139
   node 1 size: 128982 MB
   node 1 free: 127957 MB
   node 2 cpus: 28 29 30 31 32 33 34 35 36 37 38 39 40 41 140 141 142 143 144 145 146 147
   148 149 150 151 152 153
   node 2 size: 129016 MB
   node 2 free: 127942 MB
   node 3 cpus: 42 43 44 45 46 47 48 49 50 51 52 53 54 55 154 155 156 157 158 159 160 161
   162 163 164 165 166 167
   node 3 size: 129016 MB
   node 3 free: 127901 MB
   node 4 cpus: 56 57 58 59 60 61 62 63 64 65 66 67 68 69 168 169 170 171 172 173 174 175
   176 177 178 179 180 181
   node 4 size: 129016 MB
   node 4 free: 127850 MB
   node 5 cpus: 70 71 72 73 74 75 76 77 78 79 80 81 82 83 182 183 184 185 186 187 188 189
   190 191 192 193 194 195
   node 5 size: 129016 MB
   node 5 free: 127978 MB
   node 6 cpus: 84 85 86 87 88 89 90 91 92 93 94 95 96 97 196 197 198 199 200 201 202 203
   204 205 206 207 208 209
   node 6 size: 129016 MB
   node 6 free: 127947 MB
   node 7 cpus: 98 99 100 101 102 103 104 105 106 107 108 109 110 111 210 211 212 213 214
   215 216 217 218 219 220 221 222 223
   node 7 size: 128969 MB
   node 7 free: 127886 MB
   node distances:
   node   0   1   2   3   4   5   6   7
     0:  10  12  12  12  21  21  21  21
     1:  12  10  12  12  21  21  21  21
     2:  12  12  10  12  21  21  21  21
     3:  12  12  12  10  21  21  21  21
     4:  21  21  21  21  10  12  12  12
     5:  21  21  21  21  12  10  12  12
     6:  21  21  21  21  12  12  10  12
     7:  21  21  21  21  12  12  12  10

 From /proc/meminfo
    MemTotal:       1056451016 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

 /sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
    performance

 From /etc/*release* /etc/*version*
```

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## Platform Notes (Continued)

```
   os-release:
      NAME="SLES"
      VERSION="15-SP4"
      VERSION_ID="15.4"
      PRETTY_NAME="SUSE Linux Enterprise Server 15 SP4"
      ID="sles"
      ID_LIKE="suse"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:15:sp4"

uname -a:
   Linux localhost 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18
   UTC 2022 (49db222) x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):                        Not affected
CVE-2018-3620 (L1 Terminal Fault):                     Not affected
Microarchitectural Data Sampling:                      Not affected
CVE-2017-5754 (Meltdown):                              Not affected
CVE-2018-3639 (Speculative Store Bypass):              Mitigation: Speculative Store
                                                       Bypass disabled via prctl and
                                                       seccomp
CVE-2017-5753 (Spectre variant 1):                     Mitigation: usercopy/swapgs
                                                       barriers and __user pointer
                                                       sanitization
CVE-2017-5715 (Spectre variant 2):                     Mitigation: Enhanced IBRS, IBPB:
                                                       conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort):               Not affected

run-level 3 Dec 30 09:32

SPEC is set to: /spec2017
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p8 xfs   1.3T   13G  1.3T   2% /

From /sys/devices/virtual/dmi/id
    Vendor:         ASUSTeK COMPUTER INC.
    Product:        RS720-E11-RS12U
    Product Family: Server

Additional information from dmidecode 3.2 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-CQKVG 64 GB 2 rank 4800

BIOS:
   BIOS Vendor:       American Megatrends Inc.
   BIOS Version:      0501
   BIOS Date:         12/29/2022
   BIOS Revision:     5.1

(End of data from sysinfo program)
```

## Compiler Version Notes

```
==============================================================================================================
C       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(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       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(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++     | 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 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
Fortran | 548.exchange2_r(base, peak)
--------------------------------------------------------------------------------------------------------------
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.
--------------------------------------------------------------------------------------------------------------
```

## 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`
557.xz_r: `-DSPEC_LP64`

## Base Optimization Flags

C benchmarks:
`-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin -lqkmalloc`

C++ benchmarks:
`-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin -lqkmalloc`

Fortran benchmarks:
`-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/intel/compiler/2022.1.0/linux/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`
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-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fno-strict-overflow -L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin -lqkmalloc`

502.gcc_r: `-m32 -L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/ia32_lin -std=gnu89 -Wl,-z,muldefs -fprofile-generate`(pass 1) `-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX512 -Ofast -ffast-math -flto -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 -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fno-alias -L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin -lqkmalloc`

557.xz_r: `basepeak = yes`

C++ benchmarks:

**(Continued on next page)**

# Peak Optimization Flags (Continued)

520.omnetpp_r: `basepeak = yes`

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/ASUSTekPlatform-Settings-z13-V1.0.html`
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z13-V1.0.xml`
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.xml`



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


Tested with SPEC CPU®2017 v1.1.8 on 2023-01-01 01:05:20-0500.
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