SPEC CPU®2017 Integer Rate Result

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Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)

ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

$SPECrate®2017\_int\_base = 912$

$SPECrate®2017\_int\_peak = 941$

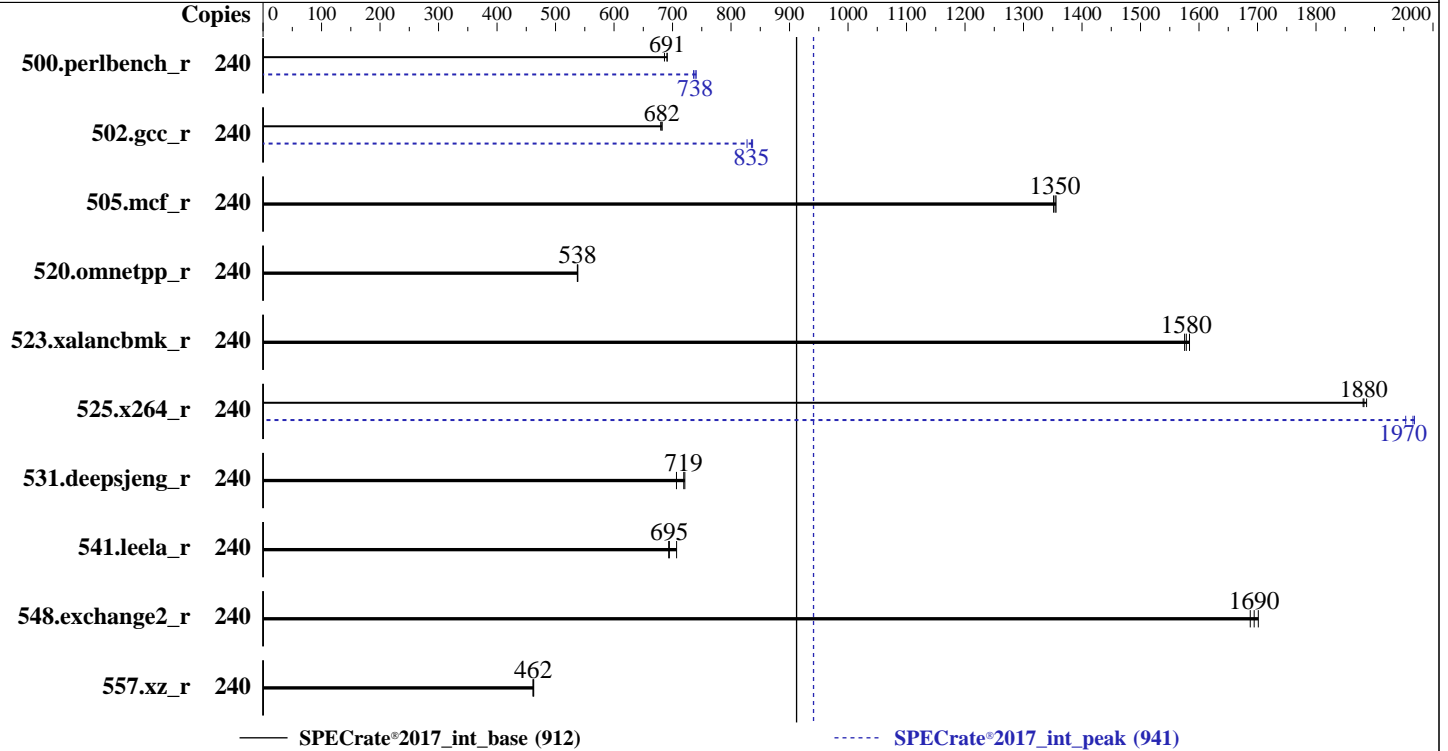**CPU2017 License:** 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Dec-2022

Hardware Availability: Feb-2023

Software Availability: Jun-2022

Benchmark	Copies	base	peak
500.perlbench_r	240	691	738
502.gcc_r	240	682	835
505.mcf_r	240	1350	
520.omnetpp_r	240	538	
523.xalancbmk_r	240	1580	
525.x264_r	240	1880	1970
531.deepsjeng_r	240	719	
541.leela_r	240	695	
548.exchange2_r	240	1690	
557.xz_r	240	462	

—— SPECrate®2017_int_base (912)   ----- SPECrate®2017_int_peak (941)

Hardware

CPU Name: Intel Xeon Platinum 8490H
Max MHz: 3500
Nominal: 1900
Enabled: 120 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 112.5 MB I+D on chip per chip
Other: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 960 GB SATA SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4 (x86_64)
Kernel 5.14.21-150400.22-default
Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Lenovo BIOS Version ESE109C 0.79 released Nov-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

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	240	557	686	553	691	**553**	**691**	240	519	736	516	740	**517**	**738**
502.gcc_r	240	498	682	**498**	**682**	500	680	240	406	837	411	827	**407**	**835**
505.mcf_r	240	**286**	**1350**	287	1350	286	1360	240	**286**	**1350**	287	1350	286	1360
520.omnetpp_r	240	585	538	**586**	**538**	586	537	240	585	538	**586**	**538**	586	537
523.xalancbmk_r	240	**161**	**1580**	161	1580	160	1580	240	**161**	**1580**	161	1580	160	1580
525.x264_r	240	**223**	**1880**	223	1880	223	1890	240	**214**	**1970**	215	1950	214	1970
531.deepsjeng_r	240	389	707	381	721	**382**	**719**	240	389	707	381	721	**382**	**719**
541.leela_r	240	**572**	**695**	562	707	573	693	240	**572**	**695**	562	707	573	693
548.exchange2_r	240	373	1690	370	1700	**371**	**1690**	240	373	1690	370	1700	**371**	**1690**
557.xz_r	240	562	461	**561**	**462**	560	463	240	562	461	**561**	**462**	560	463
SPECrate®2017_int_base =		**912**												
SPECrate®2017_int_peak =		**941**												

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"
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/home/cpu2017-1.1.8-ic2022.1/lib/intel64:/home/cpu2017-1.1.8-ic2022.1/lib/ia32:/home/cpu2017-1.1.8-ic
     2022.1/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

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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:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
SNC set to SNC4
DCU Streamer Prefetcher set to Disabled
LLC Prefetch set to Disabled
UPI Link Disable set to Disabled 1 Link
C-state set to Legacy

 Sysinfo program /home/cpu2017-1.1.8-ic2022.1/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on test1 Sat Dec  3 17:21:43 2022

 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 8490H
       2  "physical id"s (chips)
       240 "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 : 60
       siblings  : 120
       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 56 57 58 59
       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 56 57 58 59

 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):                  240
    On-line CPU(s) list:     0-239
    Vendor ID:               GenuineIntel
```

(Continued on next page)

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Hardware Availability: Feb-2023

Software Availability: Jun-2022

Platform Notes (Continued)

```
          Model name:                     Intel(R) Xeon(R) Platinum 8490H
          CPU family:                     6
          Model:                          143
          Thread(s) per core:             2
          Core(s) per socket:             60
          Socket(s):                      2
          Stepping:                       6
          BogoMIPS:                       3800.00
          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 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:                      5.6 MiB (120 instances)
          L1i cache:                      3.8 MiB (120 instances)
          L2 cache:                       240 MiB (120 instances)
          L3 cache:                       225 MiB (2 instances)
          NUMA node(s):                   8
          NUMA node0 CPU(s):              0-14,120-134
          NUMA node1 CPU(s):              15-29,135-149
          NUMA node2 CPU(s):              30-44,150-164
          NUMA node3 CPU(s):              45-59,165-179
          NUMA node4 CPU(s):              60-74,180-194
          NUMA node5 CPU(s):              75-89,195-209
          NUMA node6 CPU(s):              90-104,210-224
          NUMA node7 CPU(s):              105-119,225-239
          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     5.6M   12 Data             1     64        1             64
          L1i       32K     3.8M    8 Instruction      1     64        1             64
          L2         2M     240M   16 Unified          2   2048        1             64
          L3     112.5M     225M   15 Unified          3 122880        1             64

      /proc/cpuinfo cache data
          cache size : 115200 KB
```

(Continued on next page)

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Hardware Availability: Feb-2023
Software Availability: Jun-2022

Platform Notes (Continued)

```
 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 14 120 121 122 123 124 125 126 127 128 129
   130 131 132 133 134
   node 0 size: 64168 MB
   node 0 free: 63358 MB
   node 1 cpus: 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 135 136 137 138 139 140 141
   142 143 144 145 146 147 148 149
   node 1 size: 64504 MB
   node 1 free: 64160 MB
   node 2 cpus: 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 150 151 152 153 154 155 156
   157 158 159 160 161 162 163 164
   node 2 size: 64504 MB
   node 2 free: 64148 MB
   node 3 cpus: 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 165 166 167 168 169 170 171
   172 173 174 175 176 177 178 179
   node 3 size: 64504 MB
   node 3 free: 64210 MB
   node 4 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 180 181 182 183 184 185 186
   187 188 189 190 191 192 193 194
   node 4 size: 64504 MB
   node 4 free: 64242 MB
   node 5 cpus: 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 195 196 197 198 199 200 201
   202 203 204 205 206 207 208 209
   node 5 size: 64504 MB
   node 5 free: 64224 MB
   node 6 cpus: 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 210 211 212 213 214 215
   216 217 218 219 220 221 222 223 224
   node 6 size: 64504 MB
   node 6 free: 64220 MB
   node 7 cpus: 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 225 226 227
   228 229 230 231 232 233 234 235 236 237 238 239
   node 7 size: 64423 MB
   node 7 free: 64167 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:       527992612 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="SLES"
       VERSION="15-SP4"
       VERSION_ID="15.4"
       PRETTY_NAME="SUSE Linux Enterprise Server 15 SP4"
       ID="sles"
       ID_LIKE="suse"
```

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Platform Notes (Continued)

```
        ANSI_COLOR="0;32"
        CPE_NAME="cpe:/o:suse:sles:15:sp4"

uname -a:
   Linux test1 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 3 17:20

SPEC is set to: /home/cpu2017-1.1.8-ic2022.1
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       xfs   894G   49G  845G   6% /

From /sys/devices/virtual/dmi/id
    Vendor:        Lenovo
    Product:       ThinkSystem SR630 V3
    Product Family: ThinkSystem
    Serial:        1234567890

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 Hynix HMCG88AEBRA168N 32 GB 2 rank 4800

BIOS:
    BIOS Vendor:       Lenovo
    BIOS Version:      ESE109C-0.79
    BIOS Date:         11/22/2022
    BIOS Revision:     0.79
    Firmware Revision: 0.72

(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.
```

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Compiler Version Notes (Continued)

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

==============================================================================================
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
```

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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
```

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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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)

Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)

ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECrate®2017_int_base = 912

SPECrate®2017_int_peak = 941

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Jun-2022

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/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-N.html`
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Eaglestream-N.xml`
`http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml`

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

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