SPEC® CPU2017 Integer Rate Result

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Lenovo Global Technology

SPECrate2017_int_base = 959

ThinkSystem SR950
(2.10 GHz, Intel Xeon Platinum 8170)

SPECrate2017_int_peak = 1010

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

Test Date: Dec-2017
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Benchmark results (Copies = 416):

Benchmark	base	peak
500.perlbench_r	745	917
502.gcc_r	800	990
505.mcf_r	1140	1120
520.omnetpp_r	603	565
523.xalancbmk_r	862	1090
525.x264_r	2000	2120
531.deepsjeng_r	843	830
541.leela_r	807	818
548.exchange2_r	1880	1890
557.xz_r	724	674

SPECrate2017_int_base (959)   SPECrate2017_int_peak (1010)

Hardware

CPU Name: Intel Xeon Platinum 8170
 Max MHz.: 3700
 Nominal: 2100
Enabled: 208 cores, 8 chips, 2 threads/core
Orderable: 2,4,8 chips
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 35.75 MB I+D on chip per chip
 Other: None
Memory: 3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)
Storage: 800 GB tmpfs
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP2 (x86_64)
 Kernel 4.4.21-69-default
Compiler: C/C++: Version 18.0.0.128 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 18.0.0.128 of Intel Fortran
 Compiler for Linux
Parallel: No
Firmware: Lenovo BIOS Version PSE105X 1.00 released Aug-2017
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc: jemalloc memory allocator library
 V5.0.1;
 jemalloc: configured and built at default for
 32bit (i686) and 64bit (x86_64) targets;
 jemalloc: built with the RedHat Enterprise 7.4,
 and the system compiler gcc 4.8.5;
 jemalloc: sources avilable from jemalloc.net or
 releases

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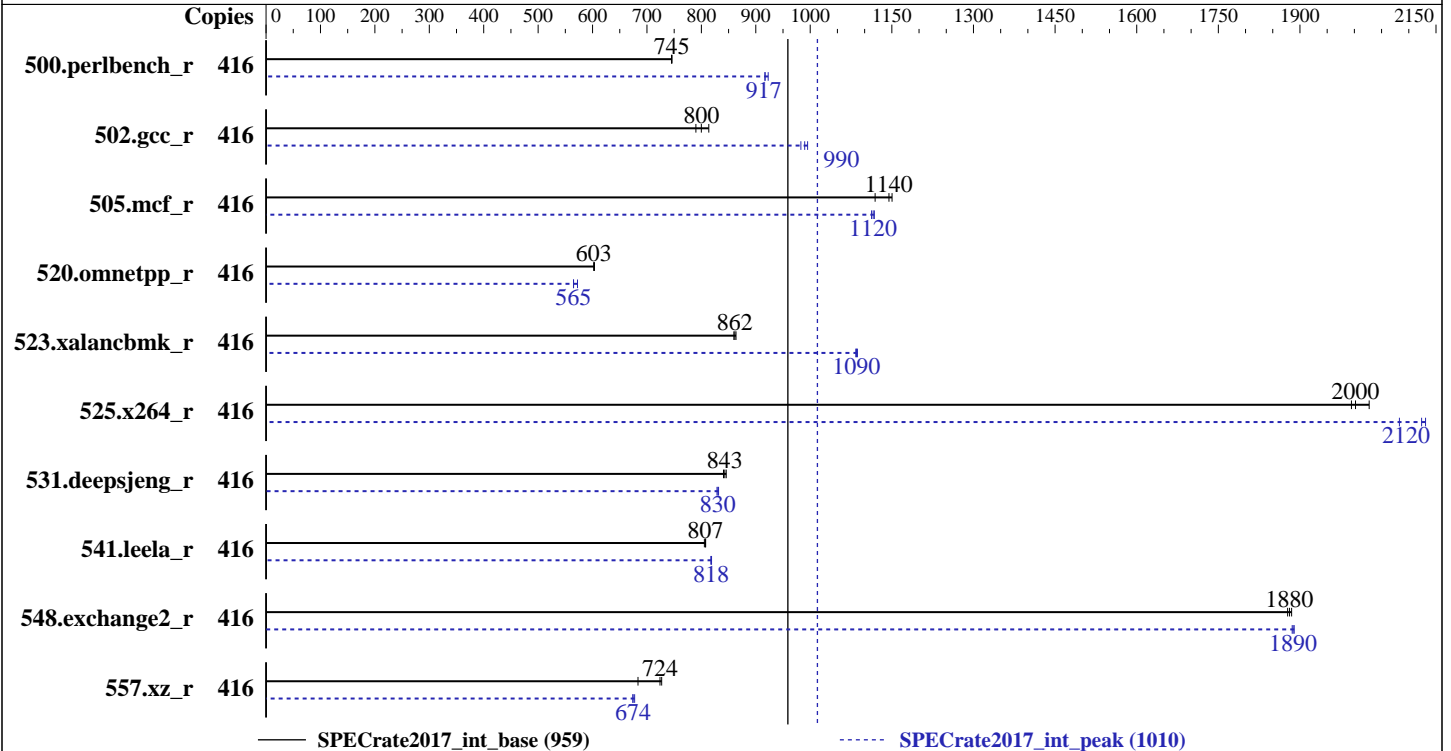
SPECrate2017_int_peak =   1010

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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	416	889	745	**888**	**745**	888	746	416	718	923	722	917	**722**	**917**
502.gcc_r	416	746	790	**736**	**800**	724	814	416	599	983	592	995	**595**	**990**
505.mcf_r	416	584	1150	**587**	**1140**	601	1120	416	601	1120	604	1110	**603**	**1120**
520.omnetpp_r	416	**906**	**603**	906	602	904	604	416	954	572	**966**	**565**	966	565
523.xalancbmk_r	416	509	864	511	860	**510**	**862**	416	405	1080	404	1090	**405**	**1090**
525.x264_r	416	365	1990	359	2030	**364**	**2000**	416	350	2080	**343**	**2120**	342	2130
531.deepsjeng_r	416	**566**	**843**	564	846	567	841	416	573	832	**574**	**830**	575	829
541.leela_r	416	855	805	853	808	**853**	**807**	416	**842**	**818**	842	818	841	819
548.exchange2_r	416	581	1880	578	1880	**579**	**1880**	416	**577**	**1890**	578	1890	577	1890
557.xz_r	416	**621**	**724**	618	727	657	684	416	**666**	**674**	667	674	663	677
SPECrate2017_int_base =		**959**												
SPECrate2017_int_peak =		**1010**												

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"
 Tmpfs filesystem can be set with:
  mount -t tmpfs -o size=800g tmpfs /home
 Process tuning setting:
  echo 50000      > /proc/sys/kernel/sched_cfs_bandwidth_slice_us
  echo 240000000 > /proc/sys/kernel/sched_latency_ns
  echo 5000000   > /proc/sys/kernel/sched_migration_cost_ns
  echo 100000000 > /proc/sys/kernel/sched_min_granularity_ns
  echo 150000000 > /proc/sys/kernel/sched_wakeup_granularity_ns
```

General Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017.1.0.2.ic18.0/lib/ia32:/home/cpu2017.1.0.2.ic18.0/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017.1.0.2.ic18.0/je5.0.1-32:/home/cpu2017.1.0.2.ic18.0/je5.0.1-64"
 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.4
 Transparent Huge Pages enabled by default
 Prior to runcpu invocation
 Filesystem page cache synced and cleared with:
```

(Continued on next page)

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General Notes (Continued)

```
sync; echo 3>        /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
```

Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Maximum Performance
SNC set to Enable
DCU Streamer Prefetcher set to Disable
MONITORMWAIT set to Enable
Execute Disable Bit set to Disable
Trusted Execution Technology set to Enable
Per Core Pstate set to Disable
XPT Prefetcher set to Enable
Stale AtoS set to Enable
LLC Deadline Alloc set to Enable
 Sysinfo program /home/cpu2017.1.0.2.ic18.0/bin/sysinfo
 Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
 running on linux-boxi Thu Dec  7 05:13:24 2017

 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 8170 CPU @ 2.10GHz
       8  "physical id"s (chips)
       416 "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 : 26
       siblings  : 52
       physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
       29
       physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
```

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Platform Notes (Continued)

```
    29
  physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28
    29

From lscpu:
    Architecture:          x86_64
    CPU op-mode(s):        32-bit, 64-bit
    Byte Order:            Little Endian
    CPU(s):                416
    On-line CPU(s) list:   0-415
    Thread(s) per core:    2
    Core(s) per socket:    26
    Socket(s):             8
    NUMA node(s):          16
    Vendor ID:             GenuineIntel
    CPU family:            6
    Model:                 85
    Model name:            Intel(R) Xeon(R) Platinum 8170 CPU @ 2.10GHz
    Stepping:              4
    CPU MHz:               2095.063
    BogoMIPS:              4190.12
    Virtualization:        VT-x
    L1d cache:             32K
    L1i cache:             32K
    L2 cache:              1024K
    L3 cache:              36608K
    NUMA node0 CPU(s):     0-3,7-9,13-15,20-22,208-211,215-217,221-223,228-230
    NUMA node1 CPU(s):     4-6,10-12,16-19,23-25,212-214,218-220,224-227,231-233
    NUMA node2 CPU(s):     26-29,33-35,39-41,46-48,234-237,241-243,247-249,254-256
    NUMA node3 CPU(s):     30-32,36-38,42-45,49-51,238-240,244-246,250-253,257-259
    NUMA node4 CPU(s):     52-55,59-61,65-67,72-74,260-263,267-269,273-275,280-282
    NUMA node5 CPU(s):     56-58,62-64,68-71,75-77,264-266,270-272,276-279,283-285
    NUMA node6 CPU(s):     78-81,85-87,91-93,98-100,286-289,293-295,299-301,306-308
    NUMA node7 CPU(s):     82-84,88-90,94-97,101-103,290-292,296-298,302-305,309-311
    NUMA node8 CPU(s):
    104-107,111-113,117-119,124-126,312-315,319-321,325-327,332-334
    NUMA node9 CPU(s):
    108-110,114-116,120-123,127-129,316-318,322-324,328-331,335-337
    NUMA node10 CPU(s):
    130-133,137-139,143-145,150-152,338-341,345-347,351-353,358-360
    NUMA node11 CPU(s):
    134-136,140-142,146-149,153-155,342-344,348-350,354-357,361-363
    NUMA node12 CPU(s):
    156-159,163-165,169-171,176-178,364-367,371-373,377-379,384-386
    NUMA node13 CPU(s):
    160-162,166-168,172-175,179-181,368-370,374-376,380-383,387-389
    NUMA node14 CPU(s):
```

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Software Availability: Sep-2017

Platform Notes (Continued)

```
     182-185,189-191,195-197,202-204,390-393,397-399,403-405,410-412
     NUMA node15 CPU(s):
     186-188,192-194,198-201,205-207,394-396,400-402,406-409,413-415
     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
   aperfmperf eagerfpu 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 ida arat epb pln pts dtherm intel_pt
   tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
   erms invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd
   avx512bw avx512vl xsaveopt xsavec xgetbv1 cqm_llc cqm_occup_llc

/proc/cpuinfo cache data
   cache size : 36608 KB

From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
physical chip.
   available: 16 nodes (0-15)
   node 0 cpus: 0 1 2 3 7 8 9 13 14 15 20 21 22 208 209 210 211 215 216 217 221 222 223
   228 229 230
   node 0 size: 192984 MB
   node 0 free: 192408 MB
   node 1 cpus: 4 5 6 10 11 12 16 17 18 19 23 24 25 212 213 214 218 219 220 224 225 226
   227 231 232 233
   node 1 size: 193528 MB
   node 1 free: 192979 MB
   node 2 cpus: 26 27 28 29 33 34 35 39 40 41 46 47 48 234 235 236 237 241 242 243 247 248
   249 254 255 256
   node 2 size: 193528 MB
   node 2 free: 184338 MB
   node 3 cpus: 30 31 32 36 37 38 42 43 44 45 49 50 51 238 239 240 244 245 246 250 251 252
   253 257 258 259
   node 3 size: 193528 MB
   node 3 free: 187898 MB
   node 4 cpus: 52 53 54 55 59 60 61 65 66 67 72 73 74 260 261 262 263 267 268 269 273 274
   275 280 281 282
   node 4 size: 193528 MB
   node 4 free: 193006 MB
   node 5 cpus: 56 57 58 62 63 64 68 69 70 71 75 76 77 264 265 266 270 271 272 276 277 278
   279 283 284 285
   node 5 size: 193528 MB
   node 5 free: 192969 MB
   node 6 cpus: 78 79 80 81 85 86 87 91 92 93 98 99 100 286 287 288 289 293 294 295 299
   300 301 306 307 308
   node 6 size: 193528 MB
   node 6 free: 193011 MB
```

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Hardware Availability: Sep-2017

Software Availability: Sep-2017

Platform Notes (Continued)

```
     node 7 cpus: 82 83 84 88 89 90 94 95 96 97 101 102 103 290 291 292 296 297 298 302 303
     304 305 309 310 311
     node 7 size: 193528 MB
     node 7 free: 193002 MB
     node 8 cpus: 104 105 106 107 111 112 113 117 118 119 124 125 126 312 313 314 315 319
     320 321 325 326 327 332 333 334
     node 8 size: 193528 MB
     node 8 free: 193022 MB
     node 9 cpus: 108 109 110 114 115 116 120 121 122 123 127 128 129 316 317 318 322 323
     324 328 329 330 331 335 336 337
     node 9 size: 193528 MB
     node 9 free: 193023 MB
     node 10 cpus: 130 131 132 133 137 138 139 143 144 145 150 151 152 338 339 340 341 345
     346 347 351 352 353 358 359 360
     node 10 size: 193528 MB
     node 10 free: 193019 MB
     node 11 cpus: 134 135 136 140 141 142 146 147 148 149 153 154 155 342 343 344 348 349
     350 354 355 356 357 361 362 363
     node 11 size: 193528 MB
     node 11 free: 193022 MB
     node 12 cpus: 156 157 158 159 163 164 165 169 170 171 176 177 178 364 365 366 367 371
     372 373 377 378 379 384 385 386
     node 12 size: 193528 MB
     node 12 free: 192923 MB
     node 13 cpus: 160 161 162 166 167 168 172 173 174 175 179 180 181 368 369 370 374 375
     376 380 381 382 383 387 388 389
     node 13 size: 193528 MB
     node 13 free: 193020 MB
     node 14 cpus: 182 183 184 185 189 190 191 195 196 197 202 203 204 390 391 392 393 397
     398 399 403 404 405 410 411 412
     node 14 size: 193528 MB
     node 14 free: 193009 MB
     node 15 cpus: 186 187 188 192 193 194 198 199 200 201 205 206 207 394 395 396 400 401
     402 406 407 408 409 413 414 415
     node 15 size: 193523 MB
     node 15 free: 192864 MB
     node distances:
     node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
       0:  10  20  20  20  20  20  20  20  20  20  20  20  20  20  20  20
       1:  20  10  20  20  20  20  20  20  20  20  20  20  20  20  20  20
       2:  20  20  10  20  20  20  20  20  20  20  20  20  20  20  20  20
       3:  20  20  20  10  20  20  20  20  20  20  20  20  20  20  20  20
       4:  20  20  20  20  10  20  20  20  20  20  20  20  20  20  20  20
       5:  20  20  20  20  20  10  20  20  20  20  20  20  20  20  20  20
       6:  20  20  20  20  20  20  10  20  20  20  20  20  20  20  20  20
       7:  20  20  20  20  20  20  20  10  20  20  20  20  20  20  20  20
       8:  20  20  20  20  20  20  20  20  10  20  20  20  20  20  20  20
```

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Platform Notes (Continued)

```
    9:  20  20  20  20  20  20  20  20  20  10  20  20  20  20  20  20
   10:  20  20  20  20  20  20  20  20  20  20  10  20  20  20  20  20
   11:  20  20  20  20  20  20  20  20  20  20  20  10  20  20  20  20
   12:  20  20  20  20  20  20  20  20  20  20  20  20  10  20  20  20
   13:  20  20  20  20  20  20  20  20  20  20  20  20  20  10  20  20
   14:  20  20  20  20  20  20  20  20  20  20  20  20  20  20  10  20
   15:  20  20  20  20  20  20  20  20  20  20  20  20  20  20  20  10

 From /proc/meminfo
    MemTotal:       3170207908 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 12 (x86_64)
       VERSION = 12
       PATCHLEVEL = 2
       # This file is deprecated and will be removed in a future service pack or release.
       # Please check /etc/os-release for details about this release.
    os-release:
       NAME="SLES"
       VERSION="12-SP2"
       VERSION_ID="12.2"
       PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
       ID="sles"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:12:sp2"

 uname -a:
    Linux linux-boxi 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67)
    x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 Dec 7 05:11

 SPEC is set to: /home/cpu2017.1.0.2.ic18.0
    Filesystem      Type    Size  Used Avail Use% Mounted on
    tmpfs           tmpfs   800G   11G  790G   2% /home

 Additional information from dmidecode 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.
    BIOS Lenovo -[PSE105X-1.00]- 08/17/2017
    Memory:
     96x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666
```

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Platform Notes (Continued)

```
  (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
  CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
      525.x264_r(base, peak) 557.xz_r(base, peak)
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
CC    500.perlbench_r(peak) 502.gcc_r(peak)
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
 CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
      541.leela_r(base)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
CXXC 520.omnetpp_r(peak) 523.xalancbmk_r(peak) 531.deepsjeng_r(peak)
     541.leela_r(peak)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
 FC  548.exchange2_r(base, peak)
------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

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Base Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

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:
`-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc`

C++ benchmarks:
`-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc`

Fortran benchmarks:
`-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte`
`-L/usr/local/je5.0.1-64/lib -ljemalloc`

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Base Other Flags

C benchmarks:
`-m64 -std=c11`

C++ benchmarks:
`-m64`

Fortran benchmarks:
`-m64`

Peak Compiler Invocation

C benchmarks:
`icc`

C++ benchmarks:
`icpc`

Fortran benchmarks:
`ifort`

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: `-D_FILE_OFFSET_BITS=64 -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: `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo`
`-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3`
`-fno-strict-overflow -L/usr/local/je5.0.1-64/lib`

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Lenovo Global Technology

ThinkSystem SR950
(2.10 GHz, Intel Xeon Platinum 8170)

SPECrate2017_int_base =   959

SPECrate2017_int_peak =   1010

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

Test Date: Dec-2017
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Peak Optimization Flags (Continued)

500.perlbench_r (continued):
`-ljemalloc`

502.gcc_r: `-L/opt/intel/compilers_and_libraries_2018/linux/lib/ia32`
`-Wl,-z,muldefs` -prof-gen(pass 1) -prof-use(pass 2) `-ipo`
`-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3`
`-L/usr/local/je5.0.1-32/lib -ljemalloc`

505.mcf_r: `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib`
`-ljemalloc`

525.x264_r: `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -fno-alias`
`-L/usr/local/je5.0.1-64/lib -ljemalloc`

557.xz_r: Same as 505.mcf_r

C++ benchmarks:

520.omnetpp_r: `-Wl,-z,muldefs` -prof-gen(pass 1) -prof-use(pass 2) `-ipo`
`-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3`
`-L/usr/local/je5.0.1-64/lib -ljemalloc`

523.xalancbmk_r: `-L/opt/intel/compilers_and_libraries_2018/linux/lib/ia32`
`-Wl,-z,muldefs` -prof-gen(pass 1) -prof-use(pass 2) `-ipo`
`-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3`
`-L/usr/local/je5.0.1-32/lib -ljemalloc`

531.deepsjeng_r: Same as 520.omnetpp_r

541.leela_r: Same as 520.omnetpp_r

Fortran benchmarks:
`-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte`
`-L/usr/local/je5.0.1-64/lib -ljemalloc`

Peak Other Flags

C benchmarks (except as noted below):
`-m64 -std=c11`

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Peak Other Flags (Continued)

502.gcc_r: -m32 -std=c11

C++ benchmarks (except as noted below):
-m64

523.xalancbmk_r: -m32

Fortran benchmarks:
-m64

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.html
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.xml
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.xml

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

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