SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

$SPECrate^{®}2017\_int\_base = 1340$

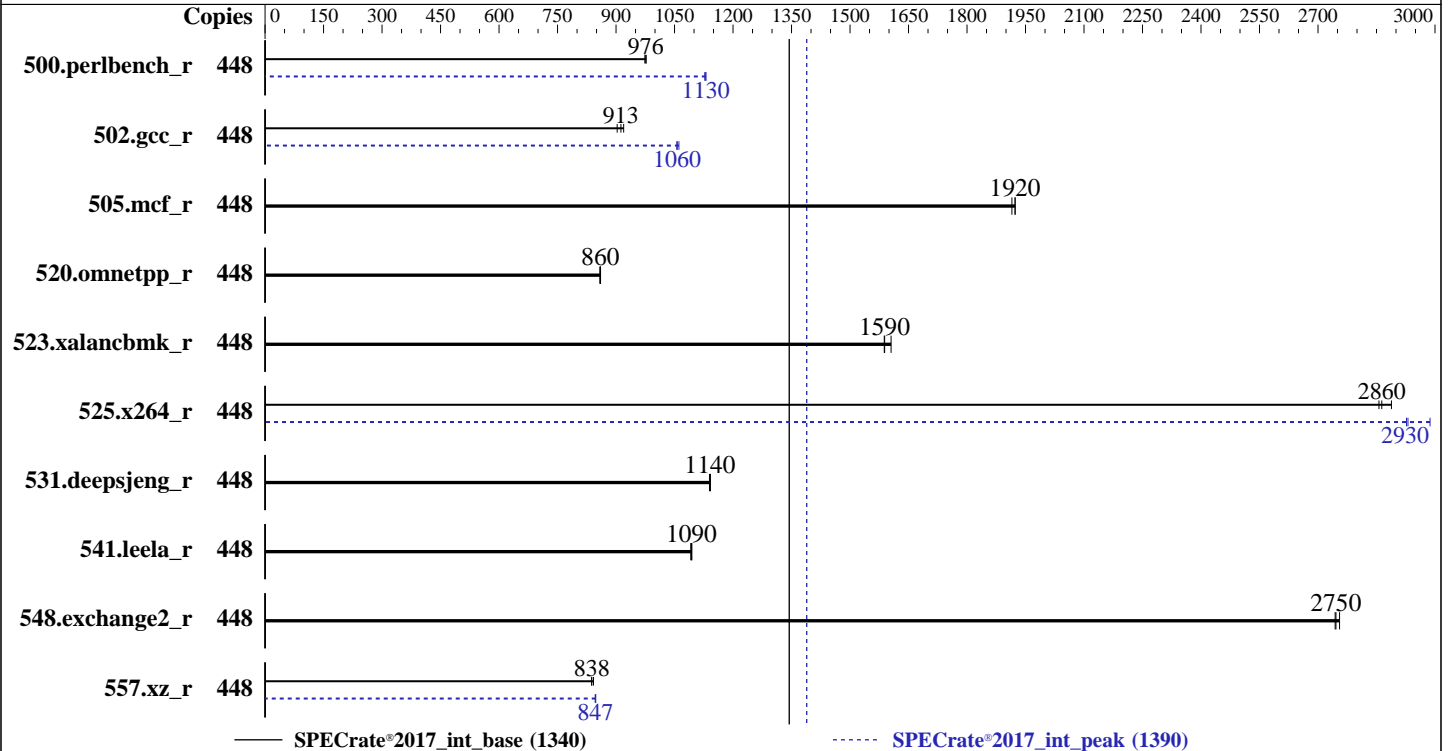$SPECrate^{®}2017\_int\_peak = 1390$

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Benchmark	Copies	base	peak
500.perlbench_r	448	976	1130
502.gcc_r	448	913	1060
505.mcf_r	448	1920	
520.omnetpp_r	448	860	
523.xalancbmk_r	448	1590	
525.x264_r	448	2860	2930
531.deepsjeng_r	448	1140	
541.leela_r	448	1090	
548.exchange2_r	448	2750	
557.xz_r	448	838	847

SPECrate®2017_int_base (1340)   SPECrate®2017_int_peak (1390)

Hardware

CPU Name: Intel Xeon Platinum 8280
 Max MHz: 4000
 Nominal: 2700
Enabled: 224 cores, 8 chips, 2 threads/core
Orderable: 2,4,6,8 chip
Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 38.5 MB I+D on chip per chip
 Other: None
Memory: 3 TB (96 x 32 GB 2Rx4 PC4-2933Y-R)
Storage: 1 x 2400 GB SAS, 10000 RPM
Other: None

Software

OS: Red Hat Enterprise Linux release 8.3 (Ootpa)
4.18.0-240.el8.x86_64
Compiler: C/C++: Version 2021.1 of Intel oneAPI DPC++/C++
Compiler Build 20201113 for Linux;
Fortran: Version 2021.1 of Intel Fortran Compiler
Classic Build 20201112 for Linux;
C/C++: Version 2021.1 of Intel C/C++ Compiler
Classic Build 20201112 for Linux
Parallel: No
Firmware: Version 8.18 released Sep-2021
File System: ext4
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.

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	448	**731**	**976**	732	974	730	977	448	**631**	**1130**	633	1130	631	1130
502.gcc_r	448	703	903	**695**	**913**	690	920	448	598	1060	**600**	**1060**	601	1060
505.mcf_r	448	378	1920	376	1920	**376**	**1920**	448	378	1920	376	1920	**376**	**1920**
520.omnetpp_r	448	685	858	683	860	**683**	**860**	448	685	858	683	860	**683**	**860**
523.xalancbmk_r	448	295	1610	298	1590	**298**	**1590**	448	295	1610	298	1590	**298**	**1590**
525.x264_r	448	272	2890	275	2860	**274**	**2860**	448	263	2990	268	2930	**268**	**2930**
531.deepsjeng_r	448	451	1140	450	1140	**450**	**1140**	448	451	1140	450	1140	**450**	**1140**
541.leela_r	448	678	1090	**678**	**1090**	680	1090	448	678	1090	**678**	**1090**	680	1090
548.exchange2_r	448	**427**	**2750**	426	2760	428	2740	448	**427**	**2750**	426	2760	428	2740
557.xz_r	448	578	838	574	842	**578**	**838**	448	**571**	**847**	572	847	571	848
SPECrate®2017_int_base =	**1340**													
SPECrate®2017_int_peak =	**1390**													

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"
```

Environment Variables Notes

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

General Notes

```
Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM
memory using Red Hat Enterprise Linux 8.1
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.
```

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

General Notes (Continued)

```
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:
Power Policy Set to Performance
SNC Set to Enabled
IMC (Integrated memory controller) Interleaving set to 1 way interleave
Xtended Prediction Table (XPT) Prefetch set to Enabled
Last Level Cache (LLC) Prefetch set to Disabled

Sysinfo program /home/spec/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Sat Feb 12 18:16:41 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 8280 CPU @ 2.70GHz
      8  "physical id"s (chips)
      448 "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 : 28
      siblings  : 56
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 2: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 3: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 4: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 5: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 6: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30
      physical 7: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
      28 29 30

From lscpu from util-linux 2.32.1:
     Architecture:        x86_64
     CPU op-mode(s):      32-bit, 64-bit
     Byte Order:          Little Endian
     CPU(s):              448
     On-line CPU(s) list: 0-447
     Thread(s) per core:  2
     Core(s) per socket:  28
     Socket(s):           8
     NUMA node(s):        16
     Vendor ID:           GenuineIntel
     CPU family:          6
     Model:               85
```

(Continued on next page)

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Platform Notes (Continued)

```
        Model name:            Intel(R) Xeon(R) Platinum 8280 CPU @ 2.70GHz
        Stepping:              7
        CPU MHz:               3299.997
        CPU max MHz:           4000.0000
        CPU min MHz:           1000.0000
        BogoMIPS:              5400.00
        Virtualization:        VT-x
        L1d cache:             32K
        L1i cache:             32K
        L2 cache:              1024K
        L3 cache:              39424K
        NUMA node0 CPU(s):     0-3,7-9,14-17,21-23,224-227,231-233,238-241,245-247
        NUMA node1 CPU(s):     4-6,10-13,18-20,24-27,228-230,234-237,242-244,248-251
        NUMA node2 CPU(s):     28-31,35-37,42-45,49-51,252-255,259-261,266-269,273-275
        NUMA node3 CPU(s):     32-34,38-41,46-48,52-55,256-258,262-265,270-272,276-279
        NUMA node4 CPU(s):     56-59,63-65,70-73,77-79,280-283,287-289,294-297,301-303
        NUMA node5 CPU(s):     60-62,66-69,74-76,80-83,284-286,290-293,298-300,304-307
        NUMA node6 CPU(s):     84-87,91-93,98-101,105-107,308-311,315-317,322-325,329-331
        NUMA node7 CPU(s):     88-90,94-97,102-104,108-111,312-314,318-321,326-328,332-335
        NUMA node8 CPU(s):     112-115,119-121,126-129,133-135,336-339,343-345,350-353,357-359
        NUMA node9 CPU(s):     116-118,122-125,130-132,136-139,340-342,346-349,354-356,360-363
        NUMA node10 CPU(s):    140-143,147-149,154-157,161-163,364-367,371-373,378-381,385-387
        NUMA node11 CPU(s):    144-146,150-153,158-160,164-167,368-370,374-377,382-384,388-391
        NUMA node12 CPU(s):    168-171,175-177,182-185,189-191,392-395,399-401,406-409,413-415
        NUMA node13 CPU(s):    172-174,178-181,186-188,192-195,396-398,402-405,410-412,416-419
        NUMA node14 CPU(s):    196-199,203-205,210-213,217-219,420-423,427-429,434-437,441-443
        NUMA node15 CPU(s):    200-202,206-209,214-216,220-223,424-426,430-433,438-440,444-447
        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 pni pclmulqdq dtes64 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 cdp_l3 invpcid_single 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 cqm mpx rdt_a avx512f
        avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
        xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
        dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d arch_capabilities

    /proc/cpuinfo cache data
       cache size : 39424 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 14 15 16 17 21 22 23 224 225 226 227 231 232 233 238 239 240
      241 245 246 247
      node 0 size: 189176 MB
      node 0 free: 191423 MB
      node 1 cpus: 4 5 6 10 11 12 13 18 19 20 24 25 26 27 228 229 230 234 235 236 237 242 243
      244 248 249 250 251
      node 1 size: 191091 MB
      node 1 free: 193330 MB
      node 2 cpus: 28 29 30 31 35 36 37 42 43 44 45 49 50 51 252 253 254 255 259 260 261 266
      267 268 269 273 274 275
      node 2 size: 191219 MB
      node 2 free: 193351 MB
      node 3 cpus: 32 33 34 38 39 40 41 46 47 48 52 53 54 55 256 257 258 262 263 264 265 270
      271 272 276 277 278 279
      node 3 size: 191371 MB
```

(Continued on next page)

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Platform Notes (Continued)

```
      node 3 free: 193347 MB
      node 4 cpus: 56 57 58 59 63 64 65 70 71 72 73 77 78 79 280 281 282 283 287 288 289 294
      295 296 297 301 302 303
      node 4 size: 191233 MB
      node 4 free: 193346 MB
      node 5 cpus: 60 61 62 66 67 68 69 74 75 76 80 81 82 83 284 285 286 290 291 292 293 298
      299 300 304 305 306 307
      node 5 size: 191251 MB
      node 5 free: 193367 MB
      node 6 cpus: 84 85 86 87 91 92 93 98 99 100 101 105 106 107 308 309 310 311 315 316 317
      322 323 324 325 329 330 331
      node 6 size: 191407 MB
      node 6 free: 193126 MB
      node 7 cpus: 88 89 90 94 95 96 97 102 103 104 108 109 110 111 312 313 314 318 319 320
      321 326 327 328 332 333 334 335
      node 7 size: 191209 MB
      node 7 free: 193374 MB
      node 8 cpus: 112 113 114 115 119 120 121 126 127 128 129 133 134 135 336 337 338 339
      343 344 345 350 351 352 353 357 358 359
      node 8 size: 190619 MB
      node 8 free: 193282 MB
      node 9 cpus: 116 117 118 122 123 124 125 130 131 132 136 137 138 139 340 341 342 346
      347 348 349 354 355 356 360 361 362 363
      node 9 size: 190209 MB
      node 9 free: 193371 MB
      node 10 cpus: 140 141 142 143 147 148 149 154 155 156 157 161 162 163 364 365 366 367
      371 372 373 378 379 380 381 385 386 387
      node 10 size: 191295 MB
      node 10 free: 193154 MB
      node 11 cpus: 144 145 146 150 151 152 153 158 159 160 164 165 166 167 368 369 370 374
      375 376 377 382 383 384 388 389 390 391
      node 11 size: 191325 MB
      node 11 free: 193351 MB
      node 12 cpus: 168 169 170 171 175 176 177 182 183 184 185 189 190 191 392 393 394 395
      399 400 401 406 407 408 409 413 414 415
      node 12 size: 191211 MB
      node 12 free: 192514 MB
      node 13 cpus: 172 173 174 178 179 180 181 186 187 188 192 193 194 195 396 397 398 402
      403 404 405 410 411 412 416 417 418 419
      node 13 size: 191195 MB
      node 13 free: 192557 MB
      node 14 cpus: 196 197 198 199 203 204 205 210 211 212 213 217 218 219 420 421 422 423
      427 428 429 434 435 436 437 441 442 443
      node 14 size: 191235 MB
      node 14 free: 193346 MB
      node 15 cpus: 200 201 202 206 207 208 209 214 215 216 220 221 222 223 424 425 426 430
      431 432 433 438 439 440 444 445 446 447
      node 15 size: 190775 MB
      node 15 free: 192775 MB
      node distances:
      node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
        0:  10  11  31  31  21  21  21  21  21  21  31  31  31  31  31  31
        1:  11  10  31  31  21  21  21  21  21  21  31  31  31  31  31  31
        2:  31  31  10  11  21  21  21  21  31  31  21  21  31  31  31  31
        3:  31  31  11  10  21  21  21  21  31  31  21  21  31  31  31  31
        4:  21  21  21  21  10  11  31  31  31  31  31  31  21  21  31  31
        5:  21  21  21  21  11  10  31  31  31  31  31  31  21  21  31  31
        6:  21  21  21  21  31  31  10  11  31  31  31  31  31  31  21  21
        7:  21  21  21  21  31  31  11  10  31  31  31  31  31  31  21  21
        8:  21  21  31  31  31  31  31  31  10  11  21  21  31  31  21  21
```

(Continued on next page)

xFusion

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

CPU2017 License: 6488	**Test Date:** Feb-2022
Test Sponsor: xFusion	**Hardware Availability:** Apr-2019
Tested by: xFusion	**Software Availability:** Dec-2020

Platform Notes (Continued)

```
    9:  21  21  31  31  31  31  31  31  11  10  21  21  31  31  21  21
   10:  31  31  21  21  31  31  31  31  21  21  10  11  21  21  31  31
   11:  31  31  21  21  31  31  31  31  21  21  11  10  21  21  31  31
   12:  31  31  31  31  21  21  31  31  31  31  21  21  10  11  21  21
   13:  31  31  31  31  21  21  31  31  31  31  21  21  11  10  21  21
   14:  31  31  31  31  31  31  21  21  21  21  31  31  21  21  10  11
   15:  31  31  31  31  31  31  21  21  21  21  31  31  21  21  11  10

From /proc/meminfo
   MemTotal:       3168351844 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/sbin/tuned-adm active
    Current active profile: throughput-performance

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

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="8.3 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.3"
      PLATFORM_ID="platform:el8"
      PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
      ANSI_COLOR="0;31"
   redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
   system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
   Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020
   x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):                         KVM: Mitigation: Split huge pages
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):                Mitigation: TSX disabled

run-level 3 Feb 12 18:03

SPEC is set to: /home/spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sdb1       ext4  2.0T  6.2G  1.9T   1% /home/spec
```

(Continued on next page)

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Platform Notes (Continued)

```
   From /sys/devices/virtual/dmi/id
      Vendor:         xFusion
      Product:        9008 V5
      Product Family: Purley
      Serial:         123456

   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:
       38x Hynix HMA84GR7CJR4N-WM 32 GB 2 rank 2933
       3x Hynix HMA84GR7JJR4N-WM 32 GB 2 rank 2933
       55x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

   BIOS:
     BIOS Vendor:       INSYDE Corp.
     BIOS Version:      8.18
     BIOS Date:         09/06/2021
     BIOS Revision:     8.18

   (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C        | 500.perlbench_r(peak) 557.xz_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build
  20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C        | 502.gcc_r(peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C        | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C        | 500.perlbench_r(peak) 557.xz_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build
  20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C        | 502.gcc_r(peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
```

<div align="center">

(Continued on next page)

</div>

xFusion

SPECrate®2017_int_base = 1340

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488   **Test Date:**   Feb-2022
Test Sponsor: xFusion   **Hardware Availability:** Apr-2019
Tested by: xFusion   **Software Availability:** Dec-2020

Compiler Version Notes (Continued)

```
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base)
-------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C       | 500.perlbench_r(peak) 557.xz_r(peak)
-------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build
  20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C       | 502.gcc_r(peak)
-------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C       | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_r(base)
-------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 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 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base, peak)
-------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build
  20201112_000000
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
  icx

C++ benchmarks:
  icpx

(Continued on next page)

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Base Compiler Invocation (Continued)

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:
```
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/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
-mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -mbranches-within-32B-boundaries
-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin
-lqkmalloc
```

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Peak Compiler Invocation

C benchmarks (except as noted below):
`icx`

500.perlbench_r: `icc`

557.xz_r: `icc`

C++ benchmarks:
`icpx`

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: `-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: `-Wl,-z,muldefs` -prof-gen(pass 1) -prof-use(pass 2)
`-xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=4 -fno-strict-overflow`
`-mbranches-within-32B-boundaries`
`-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

502.gcc_r: `-m32`
`-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/ia32_lin`
`-std=gnu89 -Wl,-z,muldefs` -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) `-xCORE-AVX512 -flto`
-Ofast(pass 1) `-O3 -ffast-math -qopt-mem-layout-trans=4`

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)   https://www.spec.org/

xFusion

xFusion KunLun 9008 V5 (Intel Xeon Platinum 8280)

SPECrate®2017_int_base = 1340

SPECrate®2017_int_peak = 1390

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Feb-2022
Hardware Availability: Apr-2019
Software Availability: Dec-2020

Peak Optimization Flags (Continued)

502.gcc_r (continued):
```
-mbranches-within-32B-boundaries
-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 -flto`
`-O3 -ffast-math -qopt-mem-layout-trans=4 -fno-alias`
`-mbranches-within-32B-boundaries`
`-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

557.xz_r: `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
`-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries`
`-L/opt/intel/oneapi/compiler/2021.1.1/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

C++ benchmarks:

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/Intel-ic2021-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-CSL-V1.1.html

---

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-CSL-V1.1.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 2022-02-12 05:16:40-0500.
Report generated on 2023-04-24 11:22:26 by CPU2017 PDF formatter v6716.
Originally published on 2022-03-01.