SPEC CPU®2017 Integer Rate Result

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Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

Huawei 2488H V5 (Intel Xeon Platinum 8268)

$SPECrate^{®}2017\_int\_base = 666$

$SPECrate^{®}2017\_int\_peak = 690$

CPU2017 License: 6177   **Test Date:** Jan-2021
Test Sponsor: China Academy of Information and Communications Technology   **Hardware Availability:** Feb-2020
Tested by: China Academy of Information and Communications Technology   **Software Availability:** Apr-2020

Benchmark	Copies	Base	Peak
500.perlbench_r	192	467	541
502.gcc_r	192	505	603
505.mcf_r	192	1110	
520.omnetpp_r	192	391	
523.xalancbmk_r	192	862	
525.x264_r	192	1380	1430
531.deepsjeng_r	192	531	
541.leela_r	192	508	
548.exchange2_r	192	1280	
557.xz_r	192	405	405

SPECrate®2017_int_base (666)   SPECrate®2017_int_peak (690)

Hardware

CPU Name: Intel Xeon Platinum 8268
 Max MHz: 3900
 Nominal: 2900
Enabled: 96 cores, 4 chips, 2 threads/core
Orderable: 2,4 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: 768 GB (48 x 16 GB 2Rx4 PC4-2933Y-R)
Storage: 1 x 960 GB SATA SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP4 (x86_64)
 4.12.14-94.41-default
Compiler: C/C++: Version 19.1.1.217 of Intel C/C++
 Compiler for Linux;
 Fortran: Version 19.1.1.217 of Intel Fortran
 Compiler for Linux
Parallel: No
Firmware: Version 6.83 released Jun-2019
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 set to prefer performance at the cost of
 additional power usage.

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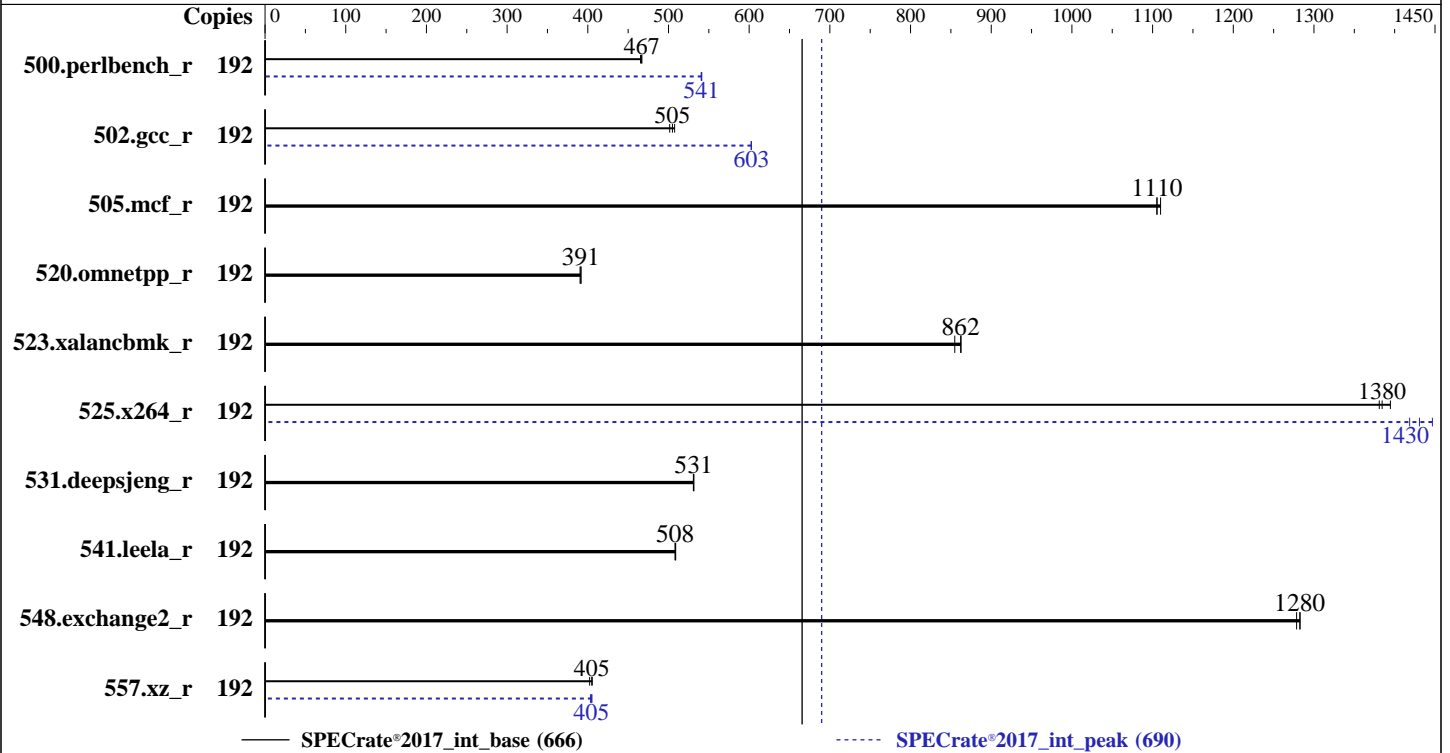|	
CPU2017 License: 6177	**Test Date:** Jan-2021
Test Sponsor: China Academy of Information and Communications Technology	**Hardware Availability:** Feb-2020
Tested by: China Academy of Information and Communications Technology	**Software Availability:** Apr-2020

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	192	**655**	**467**	657	465	655	467	192	566	541	**565**	**541**	565	541
502.gcc_r	192	**538**	**505**	542	502	536	508	192	451	602	451	603	**451**	**603**
505.mcf_r	192	**281**	**1110**	280	1110	281	1110	192	**281**	**1110**	280	1110	281	1110
520.omnetpp_r	192	645	390	643	392	**644**	**391**	192	645	390	643	392	**644**	**391**
523.xalancbmk_r	192	235	863	**235**	**862**	237	855	192	235	863	**235**	**862**	237	855
525.x264_r	192	241	1390	243	1380	**243**	**1380**	192	232	1450	**235**	**1430**	237	1420
531.deepsjeng_r	192	414	531	414	531	**414**	**531**	192	414	531	414	531	**414**	**531**
541.leela_r	192	625	509	**625**	**508**	626	508	192	625	509	**625**	**508**	626	508
548.exchange2_r	192	393	1280	392	1280	**392**	**1280**	192	393	1280	392	1280	**392**	**1280**
557.xz_r	192	511	406	**512**	**405**	515	402	192	514	403	512	405	**512**	**405**
SPECrate®2017_int_base =		**666**												
SPECrate®2017_int_peak =		**690**												

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

Compiler Notes

```
 The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler.
 The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux
 The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux
```

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 =
     "/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel6
     4:/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/ia32:
     /usr/local/jemalloc32-5.0.1"
MALLOC_CONF = "retain:true"
```

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

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Test Sponsor:	China Academy of Information and Communications Technology	**Hardware Availability:**	Feb-2020
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General Notes

```
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:
Power Policy Set to Performance
SNC Set to Enabled
IMC Interleaving Set to 1-way Interleave
XPT Prefetch Set to Enabled

Sysinfo program /spec2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on linux-mb4p Sun Jan 17 21:33:01 2021

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 8268 CPU @ 2.90GHz
      4  "physical id"s (chips)
      192 "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 : 24
      siblings  : 48
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 13 16 17 18 19 20 21 22 25 26 27 28 29
      physical 1: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
      physical 2: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 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 25 26 27 28 29

From lscpu:
```

(Continued on next page)

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Platform Notes (Continued)

```
        Architecture:          x86_64
        CPU op-mode(s):        32-bit, 64-bit
        Byte Order:            Little Endian
        CPU(s):                192
        On-line CPU(s) list:   0-191
        Thread(s) per core:    2
        Core(s) per socket:    24
        Socket(s):             4
        NUMA node(s):          8
        Vendor ID:             GenuineIntel
        CPU family:            6
        Model:                 85
        Model name:            Intel(R) Xeon(R) Platinum 8268 CPU @ 2.90GHz
        Stepping:              7
        CPU MHz:               2900.000
        CPU max MHz:           3900.0000
        CPU min MHz:           1200.0000
        BogoMIPS:              5800.00
        Virtualization:        VT-x
        L1d cache:             32K
        L1i cache:             32K
        L2 cache:              1024K
        L3 cache:              36608K
        NUMA node0 CPU(s):     0-3,7-9,12-14,19,20,96-99,103-105,108-110,115,116
        NUMA node1 CPU(s):     4-6,10,11,15-18,21-23,100-102,106,107,111-114,117-119
        NUMA node2 CPU(s):     24-27,31,32,36-38,42-44,120-123,127,128,132-134,138-140
        NUMA node3 CPU(s):     28-30,33-35,39-41,45-47,124-126,129-131,135-137,141-143
        NUMA node4 CPU(s):     48-51,55,56,60-62,66-68,144-147,151,152,156-158,162-164
        NUMA node5 CPU(s):     52-54,57-59,63-65,69-71,148-150,153-155,159-161,165-167
        NUMA node6 CPU(s):     72-75,79-81,85-87,91,92,168-171,175-177,181-183,187,188
        NUMA node7 CPU(s):     76-78,82-84,88-90,93-95,172-174,178-180,184-186,189-191
        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 tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1
        hle avx2 smep bmi2 erms invpcid rtm 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 flush_l1d arch_capabilities

 /proc/cpuinfo cache data
    cache size : 36608 KB

 From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
```

(Continued on next page)

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Platform Notes (Continued)

```
 physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0 1 2 3 7 8 9 12 13 14 19 20 96 97 98 99 103 104 105 108 109 110 115 116
   node 0 size: 95205 MB
   node 0 free: 94724 MB
   node 1 cpus: 4 5 6 10 11 15 16 17 18 21 22 23 100 101 102 106 107 111 112 113 114 117
   118 119
   node 1 size: 96763 MB
   node 1 free: 96495 MB
   node 2 cpus: 24 25 26 27 31 32 36 37 38 42 43 44 120 121 122 123 127 128 132 133 134
   138 139 140
   node 2 size: 96734 MB
   node 2 free: 96517 MB
   node 3 cpus: 28 29 30 33 34 35 39 40 41 45 46 47 124 125 126 129 130 131 135 136 137
   141 142 143
   node 3 size: 96763 MB
   node 3 free: 96513 MB
   node 4 cpus: 48 49 50 51 55 56 60 61 62 66 67 68 144 145 146 147 151 152 156 157 158
   162 163 164
   node 4 size: 96763 MB
   node 4 free: 96345 MB
   node 5 cpus: 52 53 54 57 58 59 63 64 65 69 70 71 148 149 150 153 154 155 159 160 161
   165 166 167
   node 5 size: 96763 MB
   node 5 free: 96545 MB
   node 6 cpus: 72 73 74 75 79 80 81 85 86 87 91 92 168 169 170 171 175 176 177 181 182
   183 187 188
   node 6 size: 96763 MB
   node 6 free: 96529 MB
   node 7 cpus: 76 77 78 82 83 84 88 89 90 93 94 95 172 173 174 178 179 180 184 185 186
   189 190 191
   node 7 size: 96543 MB
   node 7 free: 96298 MB
   node distances:
   node   0    1    2    3    4    5    6    7
     0:  10   11   21   21   21   21   21   21
     1:  11   10   21   21   21   21   21   21
     2:  21   21   10   11   21   21   21   21
     3:  21   21   11   10   21   21   21   21
     4:  21   21   21   21   10   11   21   21
     5:  21   21   21   21   11   10   21   21
     6:  21   21   21   21   21   21   10   11
     7:  21   21   21   21   21   21   11   10

 From /proc/meminfo
    MemTotal:       790835832 kB
    HugePages_Total:        0
```

(Continued on next page)

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Platform Notes (Continued)

```
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 12 (x86_64)
       VERSION = 12
       PATCHLEVEL = 4
       # 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-SP4"
       VERSION_ID="12.4"
       PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
       ID="sles"
       ANSI_COLOR="0;32"
       CPE_NAME="cpe:/o:suse:sles:12:sp4"

 uname -a:
    Linux linux-mb4p 4.12.14-94.41-default #1 SMP Wed Oct 31 12:25:04 UTC 2018 (3090901)
    x86_64 x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 CVE-2018-3620 (L1 Terminal Fault):      Not affected
 Microarchitectural Data Sampling:       No status reported
 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: __user pointer sanitization
 CVE-2017-5715 (Spectre variant 2):      Mitigation: Indirect Branch Restricted
                                         Speculation, IBPB, IBRS_FW


 run-level 3 Jan 17 21:28

 SPEC is set to: /spec2017
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   883G   40G  844G   5% /

 From /sys/devices/virtual/dmi/id
     BIOS:    INSYDE Corp. 6.83 06/29/2019
     Vendor:  Huawei
     Product: 2488H V5
     Product Family: Purley
     Serial:  Huawei

 Additional information from dmidecode follows.  WARNING: Use caution when you interpret
```

(Continued on next page)

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Platform Notes (Continued)

```
 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:
     48x Samsung M393A2K43CB2-CVF 16 GB 2 rank 2933


 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C        | 502.gcc_r(peak)
------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen
  Build 20200304
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) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
C        | 557.xz_r(peak)
------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10430: Unsupported command line options
  encountered
These options as listed are not supported with the compiler selected.
For more information, use '-qnextgen-diag'.
option list:
 -no-prec-div
------------------------------------------------------------------------------


==============================================================================
C        | 500.perlbench_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
```

(Continued on next page)

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Compiler Version Notes (Continued)

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


================================================================================
C            | 502.gcc_r(peak)
--------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen
  Build 20200304
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) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C            | 557.xz_r(peak)
--------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10430: Unsupported command line options
  encountered
These options as listed are not supported with the compiler selected.
For more information, use '-qnextgen-diag'.
option list:
 -no-prec-div
--------------------------------------------------------------------------------


================================================================================
C            | 500.perlbench_r(peak)
--------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
--------------------------------------------------------------------------------


================================================================================
C            | 502.gcc_r(peak)
--------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen
  Build 20200304
```

(Continued on next page)

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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) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C            | 557.xz_r(peak)
-------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10430: Unsupported command line options
  encountered
These options as listed are not supported with the compiler selected.
For more information, use '-qnextgen-diag'.
option list:
 -no-prec-div
-------------------------------------------------------------------------------


==============================================================================
C            | 500.perlbench_r(peak)
-------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------------


==============================================================================
C            | 502.gcc_r(peak)
-------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen
  Build 20200304
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) C Compiler for applications running on Intel(R) 64, Version 2021.1
```

(Continued on next page)

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Compiler Version Notes (Continued)

```
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------


==============================================================================
C        | 557.xz_r(peak)
------------------------------------------------------------------------------
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
icc (NextGen): command line warning #10430: Unsupported command line options
  encountered
These options as listed are not supported with the compiler selected.
For more information, use '-qnextgen-diag'.
option list:
 -no-prec-div
------------------------------------------------------------------------------


==============================================================================
C        | 500.perlbench_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
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) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
  NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

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SPECrate®2017_int_peak = 690

CPU2017 License: 6177   **Test Date:** Jan-2021
Test Sponsor: China Academy of Information and Communications Technology   **Hardware Availability:** Feb-2020
Tested by: China Academy of Information and Communications Technology   **Software Availability:** Apr-2020

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:
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops
-fuse-ld=gold -qopt-mem-layout-trans=4
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc

C++ benchmarks:
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse
-funroll-loops -fuse-ld=gold -qopt-mem-layout-trans=4
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc

Fortran benchmarks:
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-mem-layout-trans=4

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Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

Huawei 2488H V5 (Intel Xeon Platinum 8268)

SPECrate®2017_int_base = 666

SPECrate®2017_int_peak = 690

CPU2017 License: 6177   **Test Date:**   Jan-2021
Test Sponsor: China Academy of Information and Communications Technology   **Hardware Availability:** Feb-2020
Tested by: China Academy of Information and Communications Technology   **Software Availability:** Apr-2020

Base Optimization Flags (Continued)

Fortran benchmarks (continued):
```
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc
```

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: -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/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc
```

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Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

Huawei 2488H V5 (Intel Xeon Platinum 8268)

SPECrate®2017_int_base = 666

SPECrate®2017_int_peak = 690

CPU2017 License: 6177		**Test Date:**	Jan-2021
Test Sponsor:	China Academy of Information and Communications Technology	**Hardware Availability:**	Feb-2020
Tested by:	China Academy of Information and Communications Technology	**Software Availability:**	Apr-2020

Peak Optimization Flags (Continued)

502.gcc_r: -m32
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/ia32_lin
-std=gnu89
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto
-Ofast(pass 1) -O3 -ffast-math -qnextgen -fuse-ld=gold
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/
-ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -flto -O3 -ffast-math
-fuse-ld=gold -qopt-mem-layout-trans=4 -fno-alias
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc

557.xz_r: -m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/opt/intel/compilers_and_libraries_2020.1.217/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-ic19.1u1-official-linux64_revB.html
http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.2.html

SPEC CPU®2017 Integer Rate Result

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Huawei 2488H V5 (Intel Xeon Platinum 8268)

SPECrate®2017_int_base = 666

SPECrate®2017_int_peak = 690

CPU2017 License: 6177

Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Feb-2020

Software Availability: Apr-2020

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revB.xml
http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.2.xml

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

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