SPEC CPU®2017 Integer Rate Result

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xFusion

FusionServer 2288H V7 (Intel Xeon Platinum 8468H)

$SPECrate^{®}2017\_int\_base = 875$

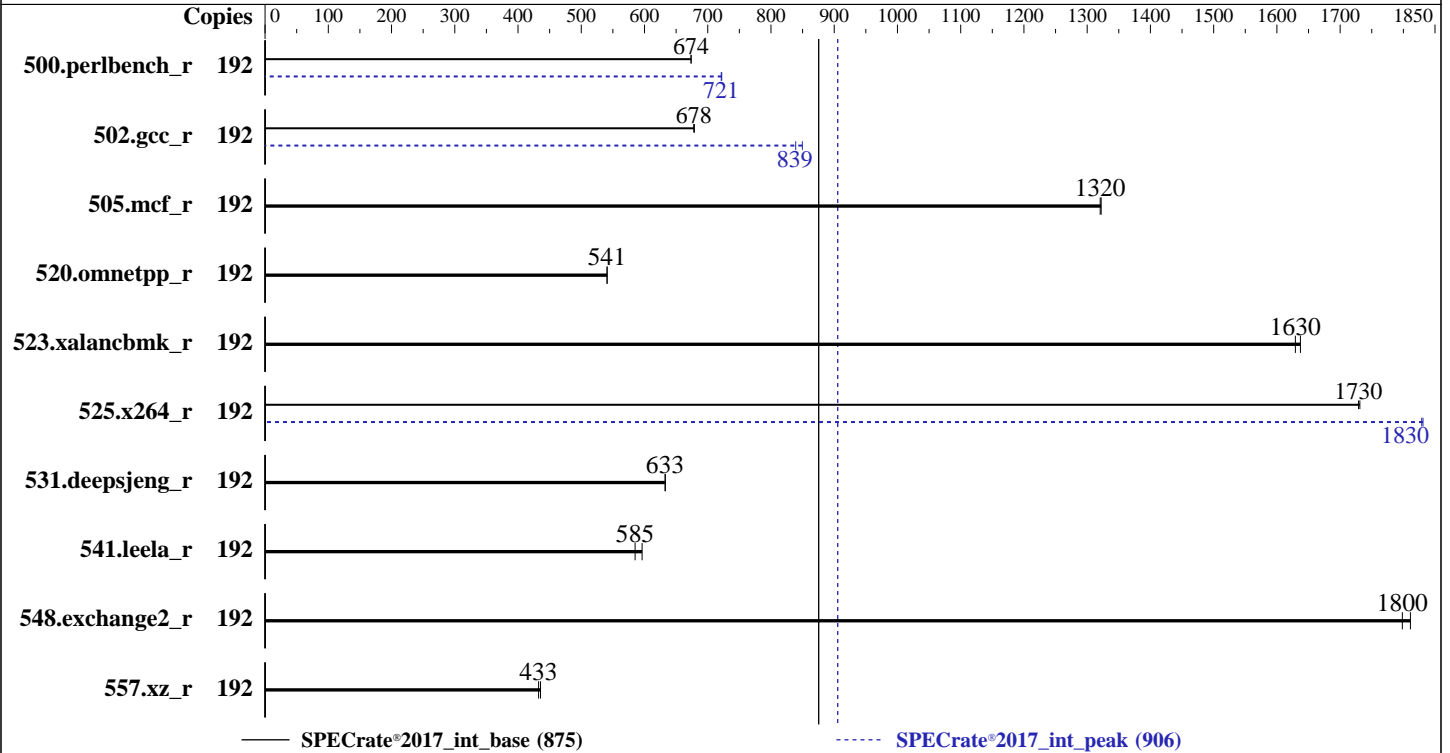$SPECrate^{®}2017\_int\_peak = 906$

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

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

Benchmark	Copies	Base	Peak
500.perlbench_r	192	674	721
502.gcc_r	192	678	839
505.mcf_r	192	1320	
520.omnetpp_r	192	541	
523.xalancbmk_r	192	1630	
525.x264_r	192	1730	1830
531.deepsjeng_r	192	633	
541.leela_r	192	585	
548.exchange2_r	192	1800	
557.xz_r	192	433	

SPECrate®2017_int_base (875)   SPECrate®2017_int_peak (906)

Hardware

CPU Name: Intel Xeon Platinum 8468H
 Max MHz: 3800
 Nominal: 2100
Enabled: 96 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: 105 MB I+D on chip per chip
 Other: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 1920 GB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 9.0 (Plow)
 5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 2.00.55 Released Mar-2023
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	192	**454**	**674**	454	674			192	423	722	**424**	**721**		
502.gcc_r	192	**401**	**678**	400	679			192	320	850	**324**	**839**		
505.mcf_r	192	**235**	**1320**	235	1320			192	**235**	**1320**	235	1320		
520.omnetpp_r	192	466	541	**466**	**541**			192	466	541	**466**	**541**		
523.xalancbmk_r	192	**124**	**1630**	124	1640			192	**124**	**1630**	124	1640		
525.x264_r	192	194	1730	**194**	**1730**			192	**184**	**1830**	184	1830		
531.deepsjeng_r	192	**348**	**633**	348	633			192	**348**	**633**	348	633		
541.leela_r	192	533	596	**543**	**585**			192	533	596	**543**	**585**		
548.exchange2_r	192	**280**	**1800**	278	1810			192	**280**	**1800**	278	1810		
557.xz_r	192	476	436	**479**	**433**			192	476	436	**479**	**433**		

SPECrate®2017_int_base = **875**

SPECrate®2017_int_peak = **906**

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/spec2017-1.1.9-ic2023/lib/intel64:/home/spec2017-1.1.9-ic2023/lib/ia32:/home/spec2017-1.1.9-ic2
    023/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:
Performance Profile Set to Performance
SNC Set to Enable SNC4 (4-clusters)

Sysinfo program /home/spec2017-1.1.9-ic2023/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Wed Jun 14 18:44:18 2023

SUT (System Under Test) info as seen by some common utilities.


------------------------------------------------------------
Table of contents
------------------------------------------------------------
 1. uname -a
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS
------------------------------------------------------------
```

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SPECrate®2017_int_base = 875

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Platform Notes (Continued)

```
    --------------------------------------------------------------
    1. uname -a
      Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
      x86_64 x86_64 GNU/Linux

    --------------------------------------------------------------
    2. w
       18:44:18 up 2 min,  1 user,  load average: 0.15, 0.20, 0.09
      USER     TTY         LOGIN@   IDLE   JCPU   PCPU WHAT
      root     tty1        18:42    1:06   1.30s  0.07s -bash

    --------------------------------------------------------------
    3. Username
      From environment variable $USER:  root

    --------------------------------------------------------------
    4. ulimit -a
      real-time non-blocking time  (microseconds, -R) unlimited
      core file size              (blocks, -c) 0
      data seg size               (kbytes, -d) unlimited
      scheduling priority         (-e) 0
      file size                   (blocks, -f) unlimited
      pending signals             (-i) 2060079
      max locked memory           (kbytes, -l) 64
      max memory size             (kbytes, -m) unlimited
      open files                  (-n) 1024
      pipe size           (512 bytes, -p) 8
      POSIX message queues        (bytes, -q) 819200
      real-time priority          (-r) 0
      stack size                  (kbytes, -s) unlimited
      cpu time            (seconds, -t) unlimited
      max user processes          (-u) 2060079
      virtual memory              (kbytes, -v) unlimited
      file locks                  (-x) unlimited

    --------------------------------------------------------------
    5. sysinfo process ancestry
     /usr/lib/systemd/systemd --switched-root --system --deserialize 28
     login -- root
     -bash
     -bash
     runcpu --define default-platform-flags --copies 192 -c ic2023.0-lin-sapphirerapids-rate-20221201.cfg
       --define smt-on --define cores=96 --define physicalfirst --define invoke_with_interleave --define
       drop_caches --tune base,peak --iterations 2 -o all intrate
     runcpu --define default-platform-flags --copies 192 --configfile
       ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=96 --define physicalfirst
       --define invoke_with_interleave --define drop_caches --tune base,peak --iterations 2 --output_format all
       --nopower --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
       $SPEC/tmp/CPU2017.070/templogs/preenv.intrate.070.0.log --lognum 070.0 --from_runcpu 2
     specperl $SPEC/bin/sysinfo
     $SPEC = /home/spec2017-1.1.9-ic2023

    --------------------------------------------------------------
    6. /proc/cpuinfo
       model name       : Intel(R) Xeon(R) Platinum 8468H
       vendor_id        : GenuineIntel
       cpu family       : 6
       model            : 143
       stepping         : 8
       microcode        : 0x2b000111
```

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CPU2017 License: 6488　　　　　　　　　　　　　　　　　　　**Test Date:** Jun-2023
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Platform Notes (Continued)

```
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 48
    siblings        : 96
    2 physical ids (chips)
    192 processors (hardware threads)
    physical id 0: core ids 0-47
    physical id 1: core ids 0-47
    physical id 0: apicids 0-95
    physical id 1: apicids 128-223
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.


  ----------------------------------------------------------
  7. lscpu

  From lscpu from util-linux 2.37.4:
    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):                    192
    On-line CPU(s) list:       0-191
    Vendor ID:                 GenuineIntel
    BIOS Vendor ID:            Intel(R) Corporation
    Model name:                Intel(R) Xeon(R) Platinum 8468H
    BIOS Model name:           Intel(R) Xeon(R) Platinum 8468H
    CPU family:                6
    Model:                     143
    Thread(s) per core:        2
    Core(s) per socket:        48
    Socket(s):                 2
    Stepping:                  8
    BogoMIPS:                  4200.00
    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 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 avx2 smep bmi2 erms
                               invpcid 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:                 4.5 MiB (96 instances)
    L1i cache:                 3 MiB (96 instances)
    L2 cache:                  192 MiB (96 instances)
    L3 cache:                  210 MiB (2 instances)
    NUMA node(s):              8
    NUMA node0 CPU(s):         0-11,96-107
    NUMA node1 CPU(s):         12-23,108-119
    NUMA node2 CPU(s):         24-35,120-131
    NUMA node3 CPU(s):         36-47,132-143
```

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Platform Notes (Continued)

```
  NUMA node4 CPU(s):             48-59,144-155
  NUMA node5 CPU(s):             60-71,156-167
  NUMA node6 CPU(s):             72-83,168-179
  NUMA node7 CPU(s):             84-95,180-191
  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
  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     4.5M   12 Data             1      64        1             64
      L1i       32K       3M    8 Instruction      1      64        1             64
      L2         2M     192M   16 Unified          2    2048        1             64
      L3       105M     210M   15 Unified          3  114688        1             64

  ------------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 8 nodes (0-7)
    node 0 cpus: 0-11,96-107
    node 0 size: 63568 MB
    node 0 free: 62875 MB
    node 1 cpus: 12-23,108-119
    node 1 size: 64470 MB
    node 1 free: 60873 MB
    node 2 cpus: 24-35,120-131
    node 2 size: 64506 MB
    node 2 free: 63877 MB
    node 3 cpus: 36-47,132-143
    node 3 size: 64506 MB
    node 3 free: 64193 MB
    node 4 cpus: 48-59,144-155
    node 4 size: 64506 MB
    node 4 free: 64049 MB
    node 5 cpus: 60-71,156-167
    node 5 size: 64506 MB
    node 5 free: 64169 MB
    node 6 cpus: 72-83,168-179
    node 6 size: 64506 MB
    node 6 free: 60897 MB
    node 7 cpus: 84-95,180-191
    node 7 size: 64486 MB
    node 7 free: 64180 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
```

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Platform Notes (Continued)

```
      ----------------------------------------------------------
      9. /proc/meminfo
         MemTotal:       527421276 kB


      ----------------------------------------------------------
      10. who -r
         run-level 3 Jun 14 18:41


      ----------------------------------------------------------
      11. Systemd service manager version: systemd 250 (250-6.el9_0)
         Default Target  Status
         multi-user      degraded


      ----------------------------------------------------------
      12. Failed units, from systemctl list-units --state=failed
           UNIT          LOAD   ACTIVE SUB    DESCRIPTION
         * sep5.service loaded failed failed systemd script to load sep5 driver at boot time


      ----------------------------------------------------------
      13. Services, from systemctl list-unit-files
         STATE             UNIT FILES
         enabled           NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
                           dbus-broker getty@ irqbalance kdump lvm2-monitor mdmonitor microcode nis-domainname
                           rhsmcertd rsyslog selinux-autorelabel-mark sep5 sshd sssd sysstat
                           systemd-network-generator tuned udisks2 upower
         enabled-runtime   systemd-remount-fs
         disabled          arp-ethers blk-availability canberra-system-bootup canberra-system-shutdown
                           canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell firewalld
                           kvm_stat man-db-restart-cache-update nftables powertop rdisc rhsm rhsm-facts rpmdb-rebuild
                           serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext
         indirect          sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo


      ----------------------------------------------------------
      14. Linux kernel boot-time arguments, from /proc/cmdline
         BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
         root=/dev/mapper/rhel-root
         ro
         crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
         resume=/dev/mapper/rhel-swap
         rd.lvm.lv=rhel/root
         rd.lvm.lv=rhel/swap


      ----------------------------------------------------------
      15. cpupower frequency-info
         analyzing CPU 0:
           Unable to determine current policy
           boost state support:
             Supported: yes
             Active: yes


      ----------------------------------------------------------
      16. tuned-adm active
         Current active profile: throughput-performance


      ----------------------------------------------------------
      17. sysctl
         kernel.numa_balancing             1
         kernel.randomize_va_space         2
         vm.compaction_proactiveness      20
         vm.dirty_background_bytes         0
```

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Platform Notes (Continued)

```
  vm.dirty_background_ratio         10
  vm.dirty_bytes                     0
  vm.dirty_expire_centisecs       3000
  vm.dirty_ratio                    40
  vm.dirty_writeback_centisecs     500
  vm.dirtytime_expire_seconds    43200
  vm.extfrag_threshold             500
  vm.min_unmapped_ratio              1
  vm.nr_hugepages                    0
  vm.nr_hugepages_mempolicy          0
  vm.nr_overcommit_hugepages         0
  vm.swappiness                     10
  vm.watermark_boost_factor      15000
  vm.watermark_scale_factor         10
  vm.zone_reclaim_mode               0


----------------------------------------------------------
18. /sys/kernel/mm/transparent_hugepage
  defrag          always defer defer+madvise [madvise] never
  enabled         [always] madvise never
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force


----------------------------------------------------------
19. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                      1
  max_ptes_none             511
  max_ptes_shared           256
  max_ptes_swap              64
  pages_to_scan            4096
  scan_sleep_millisecs    10000


----------------------------------------------------------
20. OS release
  From /etc/*-release /etc/*-version
  os-release     Red Hat Enterprise Linux 9.0 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
  system-release Red Hat Enterprise Linux release 9.0 (Plow)


----------------------------------------------------------
21. Disk information
SPEC is set to: /home/spec2017-1.1.9-ic2023
  Filesystem              Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   1.7T   67G  1.7T   4% /home


----------------------------------------------------------
22. /sys/devices/virtual/dmi/id
    Vendor:        XFUSION
    Product:       2288H V7
    Product Family: Eagle Stream
    Serial:        serial


----------------------------------------------------------
23. dmidecode
  Additional information from dmidecode 3.3 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:
```

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Platform Notes (Continued)

```
     16x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800


   -----------------------------------------------------------
   24. BIOS
   (This section combines info from /sys/devices and dmidecode.)
      BIOS Vendor:       XFUSION
      BIOS Version:      2.00.55
      BIOS Date:         03/07/2023
      BIOS Revision:     0.55
```

Compiler Version Notes

```
==============================================================================================
C    | 502.gcc_r(peak)
----------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201
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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------


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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 2023.0.0 Build 20221201
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----------------------------------------------------------------------------------------------


==============================================================================================
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 2023.0.0 Build 20221201
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----------------------------------------------------------------------------------------------


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

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

SPEC CPU®2017 Integer Rate Result

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xFusion

FusionServer 2288H V7 (Intel Xeon Platinum 8468H)

SPECrate®2017_int_base = 875

SPECrate®2017_int_peak = 906

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Base Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-DSPEC_LP64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Base Optimization Flags

C benchmarks:
`-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

C++ benchmarks:
`-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

Fortran benchmarks:
`-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto`
`-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-nostandard-realloc-lhs -align array32byte -auto`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

xFusion

FusionServer 2288H V7 (Intel Xeon Platinum 8468H)

SPECrate®2017_int_base = 875

SPECrate®2017_int_peak = 906

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

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

Peak Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

Peak Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LP64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Peak Optimization Flags

C benchmarks:

500.perlbench_r: `-w -std=c11 -m64 -Wl,-z,muldefs`
`-fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-fno-strict-overflow`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

502.gcc_r: `-m32`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/ia32_lin`
`-std=gnu89 -Wl,-z,muldefs -fprofile-generate`(pass 1)
`-fprofile-use=default.profdata`(pass 2) `-xCORE-AVX2`(pass 1)
`-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse`
`-funroll-loops -qopt-mem-layout-trans=4`
`-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc`

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xFusion

FusionServer 2288H V7 (Intel Xeon Platinum 8468H)

SPECrate®2017_int_base = 875

SPECrate®2017_int_peak = 906

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

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

Peak Optimization Flags (Continued)

505.mcf_r: `basepeak = yes`

525.x264_r: `-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast`
`-ffast-math -flto -mfpmath=sse -funroll-loops`
`-qopt-mem-layout-trans=4 -fno-alias`
`-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin`
`-lqkmalloc`

557.xz_r: `basepeak = yes`

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-ic2023-official-linux64.html`
`http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-SPR-V1.1-revC.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-SPR-V1.1-revC.xml`

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

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