SPEC CPU®2017 Integer Rate Result

Supermicro

Mainstream SuperServer SYS-621P-TRT
(X13DEI-T , Intel Xeon Gold 6530)

$SPECrate^®2017\_int\_base = 546$

$SPECrate^®2017\_int\_peak = 563$

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Jun-2024
Hardware Availability: Feb-2024
Software Availability: Mar-2024

Copies	Benchmark	base	peak
128	500.perlbench_r	418	453
128	502.gcc_r	481	565
128	505.mcf_r	888	
128	520.omnetpp_r	388	
128	523.xalancbmk_r	735	
128	525.x264_r	1110	1180
128	531.deepsjeng_r	383	
128	541.leela_r	359	
128	548.exchange2_r	1120	
128	557.xz_r	273	

—— SPECrate®2017_int_base (546)   ------ SPECrate®2017_int_peak (563)

Hardware

CPU Name: Intel Xeon Gold 6530
 Max MHz: 4000
 Nominal: 2100
Enabled: 64 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: 160 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 4 TB SATA III 7200 RPM
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP5
 Kernel 5.14.21-150500.53-default
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 2.3 released May-2024
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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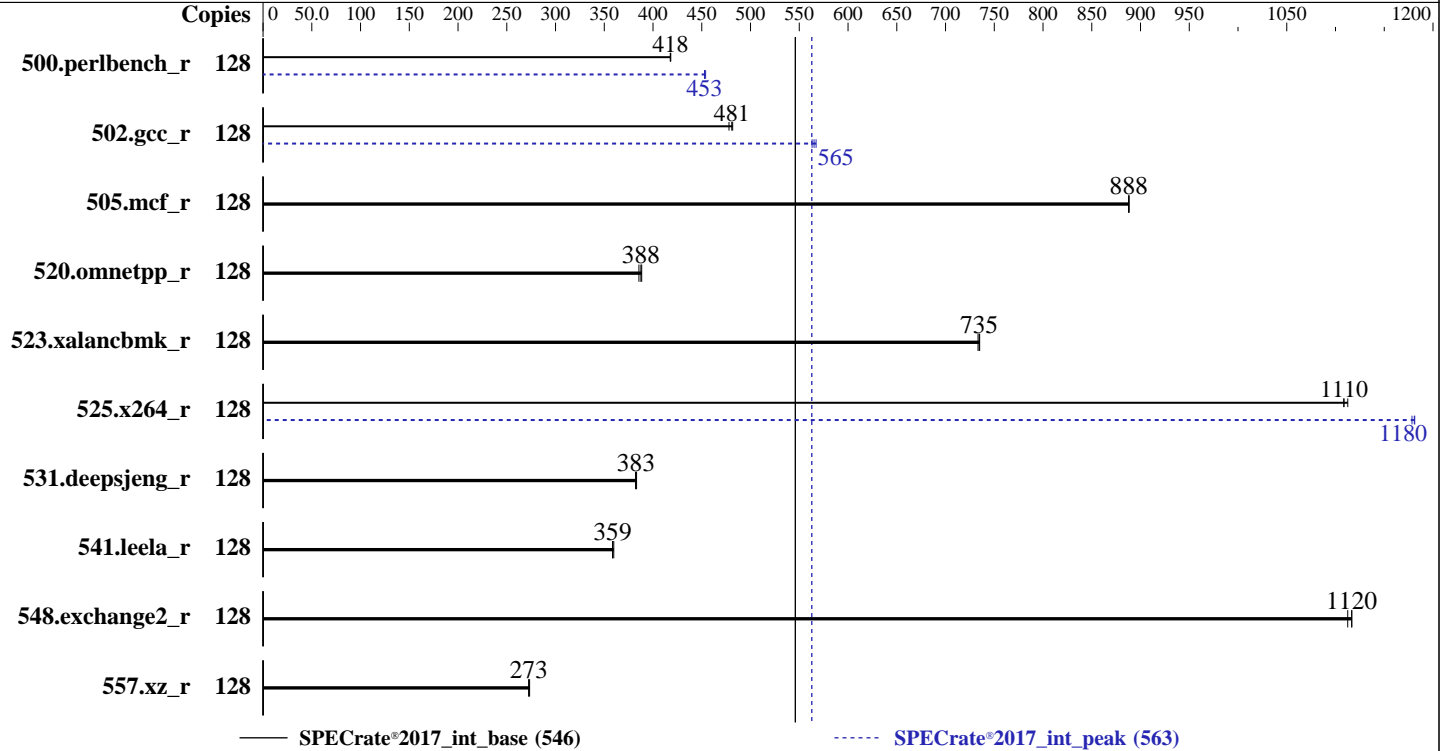
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	128	487	418	488	418	**488**	**418**	128	**450**	**453**	450	453	449	454
502.gcc_r	128	**377**	**481**	379	478	376	482	128	322	563	320	567	**321**	**565**
505.mcf_r	128	233	888	233	888	**233**	**888**	128	233	888	233	888	**233**	**888**
520.omnetpp_r	128	**433**	**388**	436	386	432	388	128	**433**	**388**	436	386	432	388
523.xalancbmk_r	128	184	733	**184**	**735**	184	735	128	184	733	**184**	**735**	184	735
525.x264_r	128	**202**	**1110**	202	1110	201	1110	128	190	1180	190	1180	**190**	**1180**
531.deepsjeng_r	128	384	382	383	383	**383**	**383**	128	384	382	383	383	**383**	**383**
541.leela_r	128	589	360	**591**	**359**	591	358	128	589	360	**591**	**359**	591	358
548.exchange2_r	128	**300**	**1120**	300	1120	301	1110	128	**300**	**1120**	300	1120	301	1110
557.xz_r	128	506	273	**507**	**273**	507	272	128	506	273	**507**	**273**	507	272
SPECrate®2017_int_base =		546												
SPECrate®2017_int_peak =		563												

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/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/je5.0.1-32"
MALLOC_CONF = "retain:true"
```

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)
```

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Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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General Notes (Continued)

```
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 Settings:
Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Performance
DCU Streamer Prefetcher = Disable
SNC = Enable SNC2 (2-clusters)
LLC Dead Line Alloc = Disable
KTI Prefetch = Enable
Stale AtoS = Disable
Patrol Scrub = Disable

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on 196-188 Fri Jun 21 15:24:23 2024

 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 249 (249.16+suse.171.gdad0071f15)
 12. Services, from systemctl list-unit-files
 13. Linux kernel boot-time arguments, from /proc/cmdline
 14. cpupower frequency-info
 15. tuned-adm active
 16. sysctl
 17. /sys/kernel/mm/transparent_hugepage
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
 19. OS release
 20. Disk information
 21. /sys/devices/virtual/dmi/id
 22. dmidecode
 23. BIOS
 ------------------------------------------------------------


 ------------------------------------------------------------
 1. uname -a
   Linux 196-188 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
   x86_64 x86_64 x86_64 GNU/Linux


 ------------------------------------------------------------
 2. w
    15:24:23 up 20 min,  1 user,  load average: 0.06, 0.02, 0.00
```

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Platform Notes (Continued)

```
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                15:04  18.00s  0.88s  0.01s -bash


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


  -------------------------------------------------------------
  4. ulimit -a
    core file size          (blocks, -c) unlimited
    data seg size           (kbytes, -d) unlimited
    scheduling priority             (-e) 0
    file size               (blocks, -f) unlimited
    pending signals                 (-i) 4126776
    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) 4126776
    virtual memory          (kbytes, -v) unlimited
    file locks                      (-x) unlimited


  -------------------------------------------------------------
  5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 30
   login -- root
   -bash
   -bash
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
     ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=64 --define physicalfirst
     --define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
   runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
     ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=64 --define physicalfirst
     --define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
     --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
  $SPEC = /home/cpu2017


  -------------------------------------------------------------
  6. /proc/cpuinfo
    model name         : INTEL(R) XEON(R) GOLD 6530
    vendor_id          : GenuineIntel
    cpu family         : 6
    model              : 207
    stepping           : 2
    microcode          : 0x21000240
    bugs               : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores          : 32
    siblings           : 64
    2 physical ids (chips)
    128 processors (hardware threads)
    physical id 0: core ids 0-31
    physical id 1: core ids 0-31
    physical id 0: apicids 0-63
    physical id 1: apicids 128-191
```

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Platform Notes (Continued)

```
    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):                      128
      On-line CPU(s) list:         0-127
      Vendor ID:                   GenuineIntel
      Model name:                  INTEL(R) XEON(R) GOLD 6530
      CPU family:                  6
      Model:                       207
      Thread(s) per core:          2
      Core(s) per socket:          32
      Socket(s):                   2
      Stepping:                    2
      Frequency boost:             enabled
      CPU max MHz:                 2101.0000
      CPU min MHz:                 800.0000
      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 monitor
                                   ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
                                   sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
                                   lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
                                   invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
                                   vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep
                                   bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
                                   avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                                   xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                                   cqm_mbm_local 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:                   3 MiB (64 instances)
      L1i cache:                   2 MiB (64 instances)
      L2 cache:                    128 MiB (64 instances)
      L3 cache:                    320 MiB (2 instances)
      NUMA node(s):                4
      NUMA node0 CPU(s):           0-15,64-79
      NUMA node1 CPU(s):           16-31,80-95
      NUMA node2 CPU(s):           32-47,96-111
      NUMA node3 CPU(s):           48-63,112-127
      Vulnerability Itlb multihit: Not affected
      Vulnerability L1tf:          Not affected
      Vulnerability Mds:           Not affected
      Vulnerability Meltdown:      Not affected
      Vulnerability Mmio stale data: Not affected
      Vulnerability Retbleed:      Not affected
      Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
      Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user pointer sanitization
```

(Continued on next page)

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Platform Notes (Continued)

```
  Vulnerability Spectre v2:        Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-eIBRS SW
                                   sequence
  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       3M   12 Data             1     64        1             64
    L1i       32K       2M    8 Instruction      1     64        1             64
    L2         2M     128M   16 Unified          2   2048        1             64
    L3       160M     320M   20 Unified          3 131072        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0-15,64-79
  node 0 size: 257678 MB
  node 0 free: 256921 MB
  node 1 cpus: 16-31,80-95
  node 1 size: 258039 MB
  node 1 free: 257302 MB
  node 2 cpus: 32-47,96-111
  node 2 size: 258039 MB
  node 2 free: 257458 MB
  node 3 cpus: 48-63,112-127
  node 3 size: 257966 MB
  node 3 free: 257311 MB
  node distances:
  node   0   1   2   3
    0:  10  12  21  21
    1:  12  10  21  21
    2:  21  21  10  12
    3:  21  21  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:      1056486220 kB

------------------------------------------------------------
10. who -r
   run-level 3 Jun 21 15:04

------------------------------------------------------------
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
   Default Target  Status
   multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
   STATE            UNIT FILES
   enabled          YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ irqbalance
                    issue-generator kbdsettings klog lvm2-monitor nscd postfix purge-kernels rollback rsyslog
                    smartd sshd systemd-pstore tuned wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6
                    wickedd-nanny
   enabled-runtime  systemd-remount-fs
   disabled         autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                    chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                    firewalld gpm grub2-once haveged haveged-switch-root ipmi ipmievd issue-add-ssh-keys
                    kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd
```

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Platform Notes (Continued)

```
                 serial-getty@ smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
                 systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
                 vncserver@
  indirect       wickedd


    ----------------------------------------------------------
 13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150500.53-default
    root=UUID=7dc34238-60d4-4e78-b77e-9836bd0394d3
    splash=silent
    mitigations=auto
    quiet
    security=apparmor


    ----------------------------------------------------------
 14. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 2.10 GHz.
                      The governor "performance" may decide which speed to use
                      within this range.
      boost state support:
        Supported: yes
        Active: yes


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


    ----------------------------------------------------------
 16. sysctl
    kernel.numa_balancing           1
    kernel.randomize_va_space       2
    vm.compaction_proactiveness     20
    vm.dirty_background_bytes       0
    vm.dirty_background_ratio       10
    vm.dirty_bytes                  0
    vm.dirty_expire_centisecs       3000
    vm.dirty_ratio                  20
    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


    ----------------------------------------------------------
 17. /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


    ----------------------------------------------------------
 18. /sys/kernel/mm/transparent_hugepage/khugepaged
    alloc_sleep_millisecs   60000
```

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Platform Notes (Continued)

```
     defrag                      1
     max_ptes_none            511
     max_ptes_shared          256
     max_ptes_swap             64
     pages_to_scan           4096
     scan_sleep_millisecs   10000


   --------------------------------------------------------------
   19. OS release
     From /etc/*-release /etc/*-version
     os-release SUSE Linux Enterprise Server 15 SP5


   --------------------------------------------------------------
   20. Disk information
   SPEC is set to: /home/cpu2017
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda2      xfs   3.7T   13G  3.7T   1% /


   --------------------------------------------------------------
   21. /sys/devices/virtual/dmi/id
       Vendor:          Supermicro
       Product:         Super Server
       Product Family:  Family
       Serial:          0123456789


   --------------------------------------------------------------
   22. dmidecode
     Additional information from dmidecode 3.4 follows.  WARNING: Use caution when you interpret this section.
     The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately
     determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
     "DMTF SMBIOS" standard.
     Memory:
       16x SK Hynix HMCG94MEBRA123N 64 GB 2 rank 4800



   --------------------------------------------------------------
   23. BIOS
   (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:        American Megatrends International, LLC.
     BIOS Version:       2.3
     BIOS Date:          05/14/2024
     BIOS Revision:      5.32
```

Compiler Version Notes

```
==================================================================================================
C        | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------
```

(Continued on next page)

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


==================================================================================================
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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 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 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------


==================================================================================================
Fortran | 548.exchange2_r(base, peak)
--------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------
```

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

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SPEC CPU®2017 Integer Rate Result
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Supermicro

Mainstream SuperServer SYS-621P-TRT
(X13DEI-T , Intel Xeon Gold 6530)

$SPECrate^{®}2017\_int\_base = 546$

$SPECrate^{®}2017\_int\_peak = 563$

Base Portability Flags (Continued)

 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/opt/intel/oneapi/compiler/2024.1/lib -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/opt/intel/oneapi/compiler/2024.1/lib -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/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc
```

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`

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Supermicro

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SPECrate®2017_int_base = 546

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CPU2017 License: 001176　　　　　　　　　　　　　　　　**Test Date:** Jun-2024
Test Sponsor: Supermicro　　　　　　　　　　　　　　**Hardware Availability:** Feb-2024
Tested by: Supermicro　　　　　　　　　　　　　　　**Software Availability:** Mar-2024

Peak Portability Flags (Continued)

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/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

502.gcc_r: `-m32 -L/opt/intel/oneapi/compiler/2024.1/lib32 -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`

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/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

557.xz_r: `basepeak = yes`

C++ benchmarks:

520.omnetpp_r: `basepeak = yes`

523.xalancbmk_r: `basepeak = yes`

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Supermicro

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SPECrate®2017_int_base = 546

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CPU2017 License: 001176		**Test Date:**	Jun-2024
Test Sponsor:	Supermicro	**Hardware Availability:**	Feb-2024
Tested by:	Supermicro	**Software Availability:**	Mar-2024

Peak Optimization Flags (Continued)

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-ic2024-official-linux64.html
  http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-EMR-revC.html

You can also download the XML flags sources by saving the following links:
  http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml
  http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-EMR-revC.xml

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

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