SPEC CPU®2017 Integer Rate Result

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Supermicro
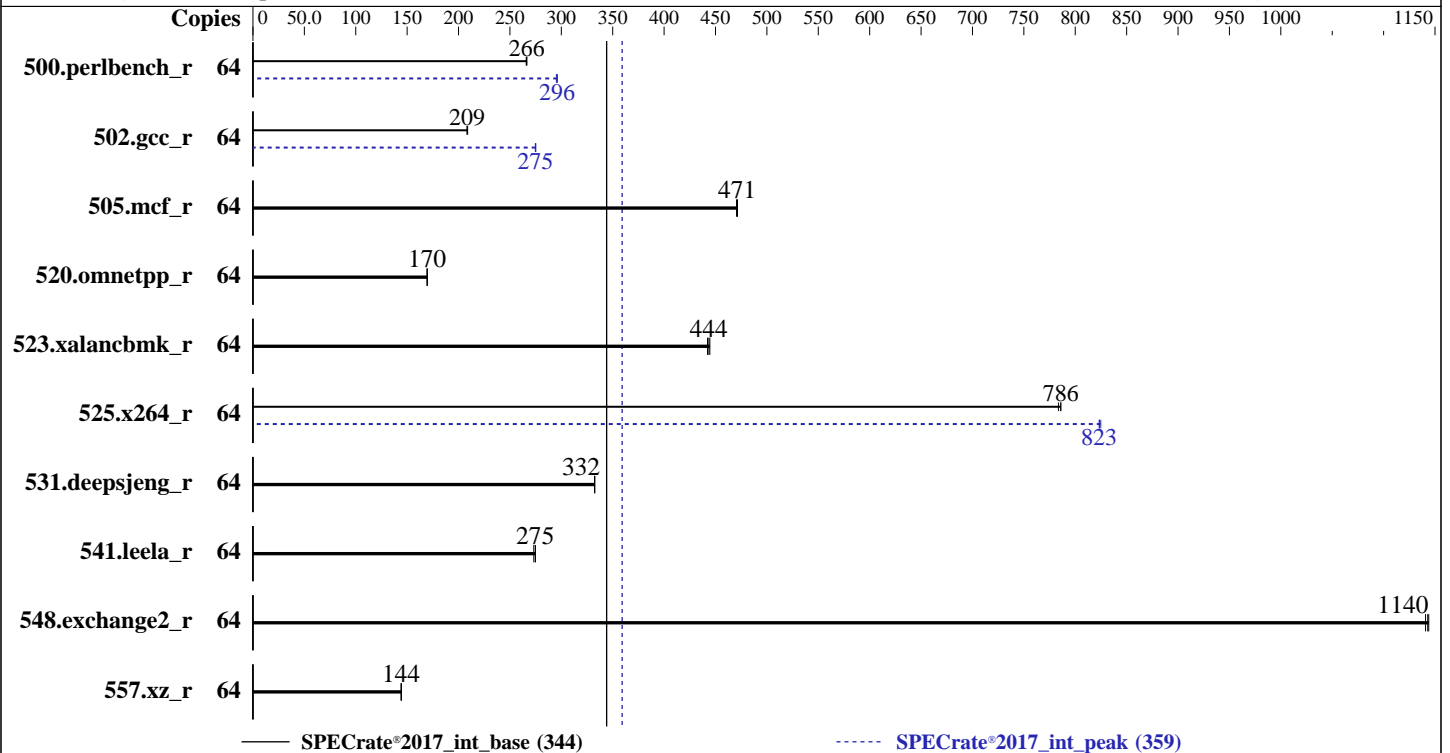
CloudDC SuperServer SYS-112C-TN
(X14SBHM , Intel Xeon 6710E)

$SPECrate®2017\_int\_base = 344$

$SPECrate®2017\_int\_peak = 359$

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

Test Date: Feb-2025
Hardware Availability: Sep-2024
Software Availability: Jun-2024

Benchmark	Copies	base	peak
500.perlbench_r	64	266	296
502.gcc_r	64	209	275
505.mcf_r	64	471	
520.omnetpp_r	64	170	
523.xalancbmk_r	64	444	
525.x264_r	64	786	823
531.deepsjeng_r	64	332	
541.leela_r	64	275	
548.exchange2_r	64	1140	
557.xz_r	64	144	

SPECrate®2017_int_base (344)   SPECrate®2017_int_peak (359)

Hardware

CPU Name: Intel Xeon 6710E
 Max MHz: 3200
 Nominal: 2400
Enabled: 64 cores, 1 chip
Orderable: 1 chip
Cache L1: 64 KB I + 32 KB D on chip per core
 L2: 4 MB I+D on chip per core
 L3: 96 MB I+D on chip per chip
 Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R, running at 5200)
Storage: 1 x 3.8 TB NVMe SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6
 Kernel 6.4.0-150600.21-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 1.2 released Jan-2025
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.

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

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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	64	383	266	382	266	**383**	**266**	64	**344**	**296**	344	296	345	295
502.gcc_r	64	**435**	**209**	435	208	434	209	64	**330**	**275**	329	275	330	275
505.mcf_r	64	**220**	**471**	220	470	219	471	64	**220**	**471**	220	470	219	471
520.omnetpp_r	64	**495**	**170**	495	169	495	170	64	**495**	**170**	495	169	495	170
523.xalancbmk_r	64	152	444	**152**	**444**	153	442	64	152	444	**152**	**444**	153	442
525.x264_r	64	143	784	**143**	**786**	143	786	64	**136**	**823**	136	823	136	825
531.deepsjeng_r	64	**221**	**332**	221	332	221	332	64	**221**	**332**	221	332	221	332
541.leela_r	64	386	275	388	273	**386**	**275**	64	386	275	388	273	**386**	**275**
548.exchange2_r	64	147	1140	147	1140	**147**	**1140**	64	147	1140	147	1140	**147**	**1140**
557.xz_r	64	**479**	**144**	479	144	479	144	64	**479**	**144**	479	144	479	144
SPECrate®2017_int_base =		**344**												
SPECrate®2017_int_peak =		**359**												

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

Submit Notes

```
The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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

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.
```

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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:
Workload Profile = HPC

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon Feb 24 10:48:23 2025

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 254 (254.10+suse.84.ge8d77af424)
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 localhost 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)
  x86_64 x86_64 x86_64 GNU/Linux


------------------------------------------------------------
2. w
   10:48:23 up 9 min,  1 user,  load average: 0.00, 0.00, 0.00
   USER     TTY       FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      -                10:41    2.00s  1.23s  0.01s -bash

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

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

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Platform Notes (Continued)

```
  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) 4125060
    max locked memory       (kbytes, -l) 8192
    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) 4125060
    virtual memory          (kbytes, -v) unlimited
    file locks                      (-x) unlimited


  ------------------------------------------------------------
  5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize=42
   login -- root
    -bash
    -bash
    runcpu --nobuild --action validate --define default-platform-flags --define numcopies=64 -c
      ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define cores=64 --define physicalfirst
      --define no-numa --reportable --tune base,peak -o all --define drop_caches intrate
    runcpu --nobuild --action validate --define default-platform-flags --define numcopies=64 --configfile
      ic2024.1-lin-sierraforest-rate-20240308.cfg --define smt-on --define cores=64 --define physicalfirst
      --define no-numa --reportable --tune base,peak --output_format all --define drop_caches --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) 6710E
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 175
    stepping        : 3
    microcode       : 0x3000330
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
    cpu cores       : 64
    siblings        : 64
    1 physical ids (chips)
    64 processors (hardware threads)
    physical id 0: core ids 0-63
    physical id 0: apicids
    0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72
    ,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118,120,122,124,126
  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 2.39.3:
    Architecture:                   x86_64
```

(Continued on next page)

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Platform Notes (Continued)

```
CPU op-mode(s):                      32-bit, 64-bit
Address sizes:                       52 bits physical, 48 bits virtual
Byte Order:                          Little Endian
CPU(s):                              64
On-line CPU(s) list:                 0-63
Vendor ID:                           GenuineIntel
BIOS Vendor ID:                      Intel(R) Corporation
Model name:                          Intel(R) Xeon(R) 6710E
BIOS Model name:                     Intel(R) Xeon(R) 6710E  CPU @ 2.4GHz
BIOS CPU family:                     179
CPU family:                          6
Model:                               175
Thread(s) per core:                  1
Core(s) per socket:                  64
Socket(s):                           1
Stepping:                            3
BogoMIPS:                            4800.00
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 intel_ppin cdp_l2
                                     ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept
                                     vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm
                                     rdt_a rdseed adx smap clflushopt clwb intel_pt sha_ni xsaveopt xsavec
                                     xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
                                     split_lock_detect user_shstk avx_vnni lam wbnoinvd dtherm ida arat
                                     pln pts vnmi umip pku ospke waitpkg gfni vaes vpclmulqdq tme rdpid
                                     bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear
                                     serialize pconfig arch_lbr ibt flush_l1d arch_capabilities
Virtualization:                      VT-x
L1d cache:                           2 MiB (64 instances)
L1i cache:                           4 MiB (64 instances)
L2 cache:                            64 MiB (16 instances)
L3 cache:                            96 MiB (1 instance)
NUMA node(s):                        1
NUMA node0 CPU(s):                   0-63
Vulnerability Gather data sampling:  Not affected
Vulnerability Itlb multihit:         Not affected
Vulnerability L1tf:                  Not affected
Vulnerability Mds:                   Not affected
Vulnerability Meltdown:              Not affected
Vulnerability Mmio stale data:       Not affected
Vulnerability Reg file data sampling: Not affected
Vulnerability Retbleed:              Not affected
Vulnerability Spec rstack overflow:  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 / Automatic IBRS; IBPB conditional; RSB filling;
                                     PBRSB-eIBRS Not affected; BHI BHI_DIS_S
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       32K       2M    8 Data            1     64        1             64
    L1i       64K       4M    8 Instruction     1    128        1             64
```

(Continued on next page)

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Platform Notes (Continued)

```
    L2          4M       64M   16 Unified        2    4096       1            64
    L3         96M       96M   12 Unified        3 131072       1            64


  ---------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 1 nodes (0)
  node 0 cpus: 0-63
  node 0 size: 1031291 MB
  node 0 free: 1030024 MB
  node distances:
  node   0
    0:  10


  ---------------------------------------------------------------
9. /proc/meminfo
  MemTotal:       1056042432 kB


  ---------------------------------------------------------------
10. who -r
  run-level 3 Feb 24 10:39


  ---------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
  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 nvmefc-boot-connections
                    nvmf-autoconnect 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 fsidd gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load lunmask
                    man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@
                    smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures systemd-confext
                    systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2
                    vncserver@
  indirect          systemd-userdbd wickedd


  ---------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
  root=UUID=1a02ed29-6031-422f-972f-2613f6512890
  splash=silent
  mitigations=auto
  quiet
  security=apparmor


  ---------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 32:
    Unable to determine current policy
    boost state support:
      Supported: yes
      Active: yes
```

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Platform Notes (Continued)

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


    ----------------------------------------------------------
    16. sysctl
      kernel.numa_balancing            0
      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
      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 SP6


    ----------------------------------------------------------
    20. Disk information
    SPEC is set to: /home/cpu2017
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/nvme0n1p2 xfs   3.5T   78G  3.5T   3% /


    ----------------------------------------------------------
    21. /sys/devices/virtual/dmi/id
        Vendor:         Supermicro
        Product:        SYS-112C-TN
        Product Family: Family
```

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Platform Notes (Continued)

```
       Serial:          4SuperServer000339


     ----------------------------------------------------------
     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 Micron Technology MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400, configured at 5200


     ----------------------------------------------------------
     23. BIOS
     (This section combines info from /sys/devices and dmidecode.)
       BIOS Vendor:       American Megatrends International, LLC.
       BIOS Version:      1.2
       BIOS Date:         01/20/2025
       BIOS Revision:     5.35
```

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.
------------------------------------------------------------------------------


==============================================================================
C        | 502.gcc_r(peak)
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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)
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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
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```

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Compiler Version Notes (Continued)

```
==============================================================================
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`
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 -xsierraforest -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 -xsierraforest -O3 -ffast-math`
`-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
`-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc`

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Supermicro

CloudDC SuperServer SYS-112C-TN
(X14SBHM , Intel Xeon 6710E)

SPECrate®2017_int_base = 344

SPECrate®2017_int_peak = 359

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Feb-2025

Hardware Availability: Sep-2024

Software Availability: Jun-2024

Base Optimization Flags (Continued)

Fortran benchmarks:
```
-w -m64 -Wl,-z,muldefs -xsierraforest -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`
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 -flto`
`-Ofast -ffast-math -mfpmath=sse -funroll-loops`

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Peak Optimization Flags (Continued)

500.perlbench_r (continued):
```
-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 -flto`
`-Ofast -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 -xsierraforest -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

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-GNR-revB.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-GNR-revB.xml

SPEC CPU®2017 Integer Rate Result

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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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