SPEC CPU®2017 Integer Rate Result

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Supermicro

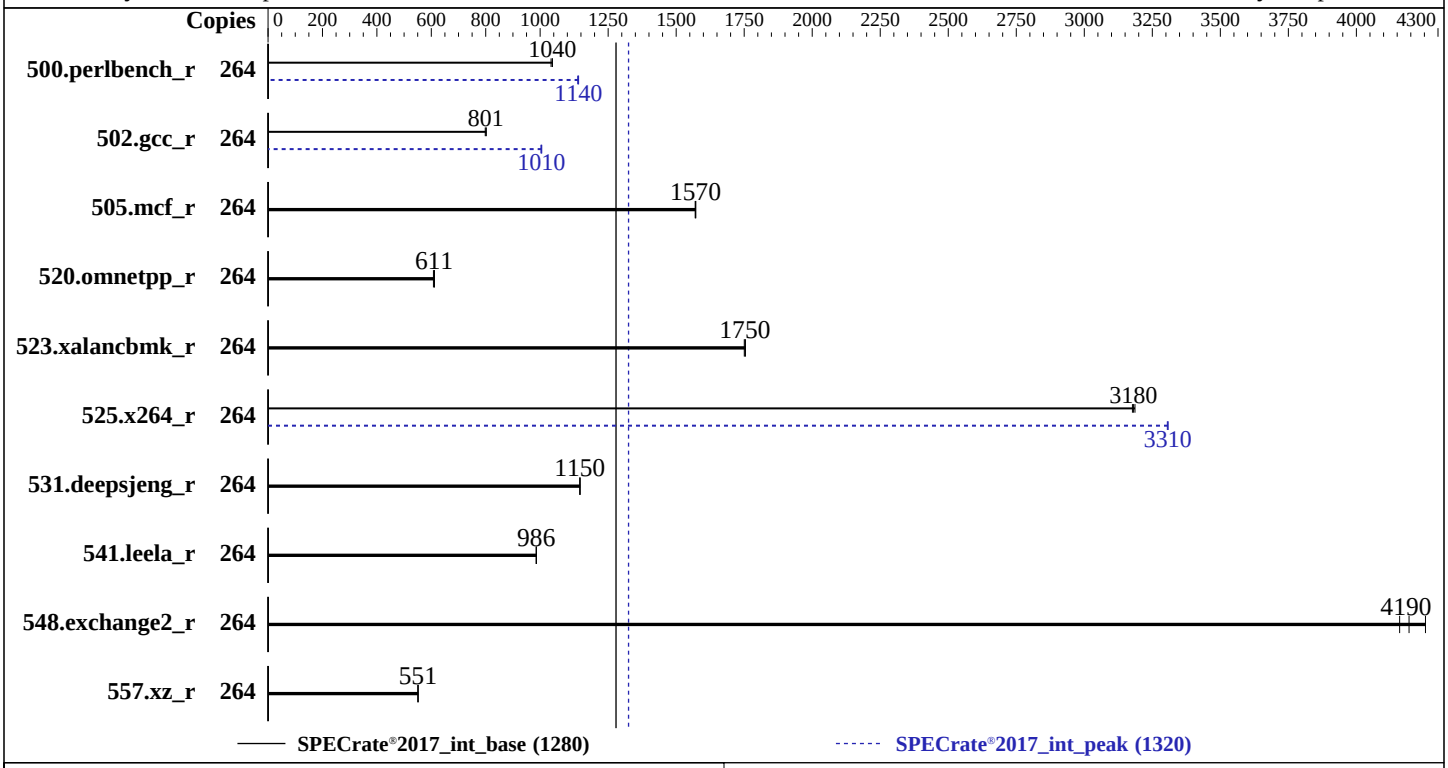
SuperServer SYS-112HA-TN
(X14SBH-AP , Intel Xeon 6980E+)

SPECrate®2017_int_base = 1280

SPECrate®2017_int_peak = 1320

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

Test Date: May-2026
Hardware Availability: Jun-2026
Software Availability: Apr-2026



Hardware

CPU Name:	Intel Xeon 6980E+
Max MHz:	3200
Nominal:	2100
Enabled:	264 cores, 1 chip
Orderable:	1 chip
Cache L1:	64 KB I + 32 KB D on chip per core
L2:	264 MB I+D on chip per chip, 4 MB shared / 4 cores
L3:	528 MB I+D on chip per chip
Other:	None
Memory:	1152 GB (12 x 96 GB 2Rx4 PC5-8000B-R)
Storage:	1 x 480 GB NVMe SSD
Other:	CPU Cooling: Air

Software

OS:	Red Hat Enterprise Linux 9.7 Kernel 5.14.0-611.5.1.el9_7.x86_64
Compiler:	C/C++: Version 2026.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2026.0 of Intel Fortran Compiler for Linux; C/C++: Version 2024.2 of Intel oneAPI DPC++/C++ Compiler for Linux;
Parallel:	No
Firmware:	Version 1.5b released May-2026
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	264	**402**	**1040**	402	1040	404	1040	264	369	1140	368	1140	**369**	**1140**
502.gcc_r	264	468	798	**467**	**801**	466	802	264	373	1000	372	1010	**372**	**1010**
505.mcf_r	264	271	1570	**271**	**1570**	272	1570	264	271	1570	**271**	**1570**	272	1570
520.omnetpp_r	264	566	612	570	608	**567**	**611**	264	566	612	570	608	**567**	**611**
523.xalancbmk_r	264	**159**	**1750**	159	1750	159	1750	264	**159**	**1750**	159	1750	159	1750
525.x264_r	264	**145**	**3180**	145	3190	146	3180	264	140	3310	140	3310	**140**	**3310**
531.deepsjeng_r	264	264	1150	**264**	**1150**	264	1150	264	264	1150	**264**	**1150**	264	1150
541.leela_r	264	**443**	**986**	444	986	443	986	264	**443**	**986**	444	986	443	986
548.exchange2_r	264	163	4250	166	4160	**165**	**4190**	264	163	4250	166	4160	**165**	**4190**
557.xz_r	264	518	551	**517**	**551**	517	552	264	518	551	**517**	**551**	517	552

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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"
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)
```

(Continued on next page)

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:
Workload Profile = HPC
KTI Prefetch = Enable
Stale AtoS = Disable
LLC Dead Line Alloc = Disable

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on 135-179-165.engtw Mon May 25 15:43:01 2026

 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 252 (252-55.el9)
 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 135-179-165.engtw 5.14.0-611.5.1.el9_7.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Oct 17 14:16:35 EDT 2025
   x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    15:43:02 up 1 min,  1 user,  load average: 0.10, 0.06, 0.02
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      15:41    3.00s  1.11s  0.01s -bash

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

(Continued on next page)

Platform Notes (Continued)

```
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) 4640021
  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) 4640021
  virtual memory              (kbytes, -v) unlimited
  file locks                          (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=264 -c
   ic2026.0-lin-clearwaterforest-rate-20260429.cfg --define smt-on --define cores=264 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --reportable --tune base,peak -o all intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=264 --configfile
   ic2026.0-lin-clearwaterforest-rate-20260429.cfg --define smt-on --define cores=264 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --reportable --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) 6980E+
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 221
    stepping        : 1
    microcode       : 0x1000120
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi spectre_v2_user
    cpu cores       : 264
    siblings        : 264
    1 physical ids (chips)
    264 processors (hardware threads)
    physical id 0: core ids 0-87,128-215,256-343
    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
    ,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118,120,122,124,126,128,130,1
    32,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,256,258,260,262,26
    4,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,308,310,312,314,316
    ,318,320,322,324,326,328,330,332,334,336,338,340,342,344,346,348,350,352,354,356,358,360,362,364,366,368,
```

(Continued on next page)

Platform Notes (Continued)

```
    370,372,374,376,378,380,382,384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,4
    22,424,426,428,430,512,514,516,518,520,522,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,55
    4,556,558,560,562,564,566,568,570,572,574,576,578,580,582,584,586,588,590,592,594,596,598,600,602,604,606
    ,608,610,612,614,616,618,620,622,624,626,628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,
    660,662,664,666,668,670,672,674,676,678,680,682,684,686
  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:                        52 bits physical, 48 bits virtual
  Byte Order:                           Little Endian
  CPU(s):                               264
  On-line CPU(s) list:                  0-263
  Vendor ID:                            GenuineIntel
  BIOS Vendor ID:                       Intel(R) Corporation
  Model name:                           Intel(R) Xeon(R) 6980E+
  BIOS Model name:                      Intel(R) Xeon(R) 6980E+
  CPU family:                           6
  Model:                                221
  Thread(s) per core:                   1
  Core(s) per socket:                   264
  Socket(s):                            1
  Stepping:                             1
  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 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:                            8.3 MiB (264 instances)
  L1i cache:                            16.5 MiB (264 instances)
  L2 cache:                             264 MiB (66 instances)
  L3 cache:                             528 MiB (1 instance)
  NUMA node(s):                         3
  NUMA node0 CPU(s):                    0-87
  NUMA node1 CPU(s):                    88-175
  NUMA node2 CPU(s):                    176-263
  Vulnerability Gather data sampling:   Not affected
  Vulnerability Indirect target selection: Not affected
  Vulnerability Itlb multihit:          Not affected
  Vulnerability L1tf:                   Not affected
  Vulnerability Mds:                    Not affected
```

(Continued on next page)

Platform Notes (Continued)

```
  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;
                                           PBRSB-eIBRS Not affected; BHI BHI_DIS_S
  Vulnerability Srbds:                     Not affected
  Vulnerability Tsa:                       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     8.3M    8 Data            1     64        1             64
     L1i       64K    16.5M    8 Instruction     1    128        1             64
     L2         4M     264M   16 Unified         2   4096        1             64
     L3       528M     528M   16 Unified         3 540672        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 3 nodes (0-2)
  node 0 cpus: 0-87
  node 0 size: 386041 MB
  node 0 free: 384464 MB
  node 1 cpus: 88-175
  node 1 size: 387003 MB
  node 1 free: 384706 MB
  node 2 cpus: 176-263
  node 2 size: 387023 MB
  node 2 free: 385842 MB
  node distances:
  node     0    1    2
     0:   10   15   17
     1:   15   10   15
     2:   17   15   10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1187911072 kB

------------------------------------------------------------
10. who -r
  run-level 3 May 25 15:41

------------------------------------------------------------
11. Systemd service manager version: systemd 252 (252-55.el9)
  Default Target  Status
  multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE           UNIT FILES
  enabled         ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
                  accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker firewalld
                  gdm getty@ insights-client-boot irqbalance iscsi-onboot iscsi-starter kdump libstoragemgmt
                  low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
```

(Continued on next page)

Platform Notes (Continued)

```
                  nvmefc-boot-connections ostree-remount qemu-guest-agent rhsmcertd rsyslog rtkit-daemon
                  selinux-autorelabel-mark smartd sshd sssd switcheroo-control systemd-boot-update
                  systemd-network-generator systemd-pstore tuned udisks2 upower vgauthd vmtoolsd
  enabled-runtime systemd-remount-fs
  disabled        arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
                  canberra-system-shutdown-reboot chrony-wait chronyd-restricted cni-dhcp console-getty
                  cpupower cups-browsed dbus-daemon debug-shell dnf-system-upgrade dnsmasq iprdump iprinit
                  iprupdate iscsi-init iscsid iscsiuio kpatch kvm_stat ledmon lvm-devices-import
                  man-db-restart-cache-update netavark-dhcp-proxy netavark-firewalld-reload nftables
                  nvmf-autoconnect ostree-readonly-sysroot-migration ostree-state-overlay@ podman
                  podman-auto-update podman-clean-transient podman-kube@ podman-restart psacct ras-mc-ctl
                  rasdaemon rdisc rhcd rhsm rhsm-facts rpmdb-rebuild selinux-check-proper-disable
                  serial-getty@ speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures
                  systemd-sysext tuned-ppd wpa_supplicant
  indirect        iscsi spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
                  systemd-sysupdate systemd-sysupdate-reboot

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-611.5.1.el9_7.x86_64
  root=/dev/mapper/rhel_135--180--133-root
  ro
  resume=/dev/mapper/rhel_135--180--133-swap
  rd.lvm.lv=rhel_135-180-133/root
  rd.lvm.lv=rhel_135-180-133/swap
  rhgb
  quiet
  crashkernel=1G-2G:192M,2G-64G:256M,64G-:512M

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 226:
    Unable to determine current policy
    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                    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
```

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Platform Notes (Continued)

```
  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     Red Hat Enterprise Linux 9.7 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.7 (Plow)
  system-release Red Hat Enterprise Linux release 9.7 (Plow)

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem                          Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel_135--180--133-home xfs   372G   37G  336G  10% /home

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

------------------------------------------------------------
22. dmidecode
  Additional information from dmidecode 3.6 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:
    12x SK Hynix HMCGM4AMBRB970N 96 GB 2 rank 8000


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      1.5b
   BIOS Date:         05/04/2026
   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 2024.2.1 Build 20240711
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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.2.1 Build 20240711
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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
Fortran | 548.exchange2_r(base, peak)
--------------------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 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 -xclearwaterforest -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -L/home/specdev/intel-compilers/compiler/latest/lib -lqkmalloc`

C++ benchmarks:
`-w -std=c++14 -m64 -Wl,-z,muldefs -xclearwaterforest -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fdelayed-template-parsing -L/home/specdev/intel-compilers/compiler/latest/lib -lqkmalloc`

Fortran benchmarks:
`-w -m64 -Wl,-z,muldefs -xclearwaterforest -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte -auto -L/home/specdev/intel-compilers/compiler/latest/lib -lqkmalloc`

Peak Compiler Invocation

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

502.gcc_r: `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
-qopt-mem-layout-trans=4 -fno-strict-overflow
-fno-strict-aliasing
-L/home/specdev/intel-compilers/compiler/latest/lib
-lqkmalloc

502.gcc_r: -m32 -L/home/specdev/intel-compilers/compiler/2024.2/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 -xclearwaterforest
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/home/specdev/intel-compilers/compiler/latest/lib
-lqkmalloc

557.xz_r: basepeak = yes

C++ benchmarks:

(Continued on next page)

Peak Optimization Flags (Continued)

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-ic2026-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CWF-revC.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CWF-revC.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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