SPEC CPU®2017 Integer Rate Result

Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6787P 2.0 GHz processor)

SPECrate®2017_int_base = 1430

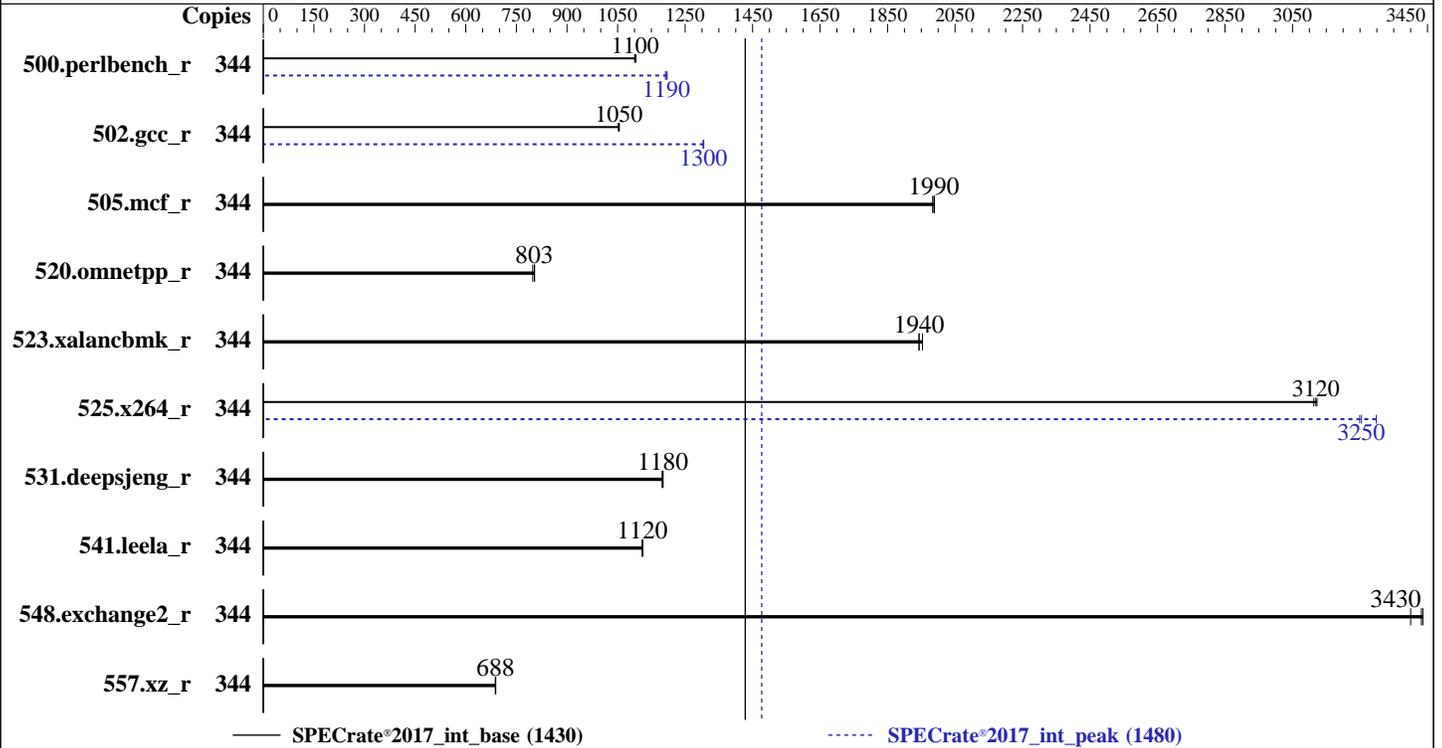SPECrate®2017_int_peak = 1480

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

Copies		
500.perlbench_r	344	1100 / 1190
502.gcc_r	344	1050 / 1300
505.mcf_r	344	1990
520.omnetpp_r	344	803
523.xalancbmk_r	344	1940
525.x264_r	344	3120 / 3250
531.deepsjeng_r	344	1180
541.leela_r	344	1120
548.exchange2_r	344	3430
557.xz_r	344	688

SPECrate®2017_int_base (1430)   SPECrate®2017_int_peak (1480)

Hardware

CPU Name: Intel Xeon 6787P
 Max MHz: 3800
 Nominal: 2000
 Enabled: 172 cores, 2 chips, 2 threads/core
 Orderable: 1,2 Chips
 Cache L1: 64 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 336 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R)
 Storage: 1 x 222 GB NVME SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6
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 4.3.6b released Apr-2025
File System: btrfs
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/

SPEC CPU®2017 Integer Rate Result

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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	344	496	1100	498	1100	**497**	**1100**	344	458	1200	460	1190	**458**	**1190**
502.gcc_r	344	**462**	**1050**	462	1060	463	1050	344	373	1310	374	1300	**373**	**1300**
505.mcf_r	344	280	1990	280	1980	**280**	**1990**	344	280	1990	280	1980	**280**	**1990**
520.omnetpp_r	344	565	798	561	804	**562**	**803**	344	565	798	561	804	**562**	**803**
523.xalancbmk_r	344	186	1950	**187**	**1940**	187	1940	344	186	1950	**187**	**1940**	187	1940
525.x264_r	344	**193**	**3120**	193	3110	193	3120	344	183	3300	**185**	**3250**	185	3250
531.deepsjeng_r	344	333	1180	**333**	**1180**	334	1180	344	333	1180	**333**	**1180**	334	1180
541.leela_r	344	**507**	**1120**	507	1120	506	1130	344	**507**	**1120**	507	1120	506	1130
548.exchange2_r	344	262	3440	**263**	**3430**	265	3400	344	262	3440	**263**	**3430**	265	3400
557.xz_r	344	539	689	540	688	**540**	**688**	344	539	689	540	688	**540**	**688**
SPECrate®2017_int_base =		**1430**												
SPECrate®2017_int_peak =		**1480**												

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)
```

(Continued on next page)

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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:
Hardware prefetcher set to Enabled
Adjacent cache line prefetcher set to Disabled
Patrol scrub set to Disabled
XPT prefetch set to Disabled
LLC prefetch set to Enabled
Enhanced CPU performance set to Auto

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Mon Nov 24 07:52:07 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. 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
 ------------------------------------------------------------


 ------------------------------------------------------------
 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
    07:52:07 up 6 min,  2 users,  load average: 0.12, 0.09, 0.05
```

(Continued on next page)

Cisco Systems

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Platform Notes (Continued)

```
 USER      TTY       FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
 root      pts/0     10.29.148.194   07:51    7.00s  1.07s  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) 4122568
   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) 4122568
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited


 ------------------------------------------------------------
 5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=31
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd: root [priv]
 sshd: root@pts/0
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=344 -c
   ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=172 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak -n 3 -o all intrate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=344 --configfile
   ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=172 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak --iterations 3 --output_format all
   --nopower --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.147/templogs/preenv.intrate.147.0.log --lognum 147.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017


 ------------------------------------------------------------
 6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) 6787P
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 173
   stepping        : 1
   microcode       : 0x1000380
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
   cpu cores       : 86
   siblings        : 172
   2 physical ids (chips)
   344 processors (hardware threads)
   physical id 0: core ids 0-42,64-106
   physical id 1: core ids 0-42,64-106
```

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Cisco Systems

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CPU2017 License: 9019

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Platform Notes (Continued)

```
    physical id 0: apicids 0-85,128-213
    physical id 1: apicids 256-341,384-469
  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
    CPU op-mode(s):                 32-bit, 64-bit
    Address sizes:                  46 bits physical, 57 bits virtual
    Byte Order:                     Little Endian
    CPU(s):                         344
    On-line CPU(s) list:            0-343
    Vendor ID:                      GenuineIntel
    BIOS Vendor ID:                 Intel(R) Corporation
    Model name:                     Intel(R) Xeon(R) 6787P
    BIOS Model name:                Intel(R) Xeon(R) 6787P  CPU @ 2.0GHz
    BIOS CPU family:                179
    CPU family:                     6
    Model:                          173
    Thread(s) per core:             2
    Core(s) per socket:             86
    Socket(s):                      2
    Stepping:                       1
    CPU(s) scaling MHz:             22%
    CPU max MHz:                    3800.0000
    CPU min MHz:                    800.0000
    BogoMIPS:                       4000.00
    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 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 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 split_lock_detect user_shstk avx_vnni avx512_bf16
                                    wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp
                                    hwp_pkg_req 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 ibt amx_bf16 avx512_fp16 amx_tile
                                    amx_int8 flush_l1d arch_capabilities
    L1d cache:                      8.1 MiB (172 instances)
    L1i cache:                      10.8 MiB (172 instances)
    L2 cache:                       344 MiB (172 instances)
    L3 cache:                       672 MiB (2 instances)
    NUMA node(s):                   4
    NUMA node0 CPU(s):              0-42,172-214
    NUMA node1 CPU(s):              43-85,215-257
    NUMA node2 CPU(s):              86-128,258-300
    NUMA node3 CPU(s):              129-171,301-343
    Vulnerability Gather data sampling: Not affected
    Vulnerability Itlb multihit:    Not affected
```

(Continued on next page)

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Platform Notes (Continued)

```
  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      48K      8.1M   12 Data             1      64        1             64
      L1i      64K     10.8M   16 Instruction      1      64        1             64
      L2        2M      344M   16 Unified          2    2048        1             64
      L3      336M      672M   16 Unified          3  344064        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: 0-42,172-214
  node 0 size: 257032 MB
  node 0 free: 256126 MB
  node 1 cpus: 43-85,215-257
  node 1 size: 258025 MB
  node 1 free: 257232 MB
  node 2 cpus: 86-128,258-300
  node 2 size: 258025 MB
  node 2 free: 257154 MB
  node 3 cpus: 129-171,301-343
  node 3 size: 257583 MB
  node 3 free: 256548 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:       1055403080 kB

  ------------------------------------------------------------
10. who -r
  run-level 3 Nov 24 07:45

  ------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
  Default Target  Status
  multi-user      degraded

  ------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT            LOAD   ACTIVE SUB    DESCRIPTION
```

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Platform Notes (Continued)

```
    * postfix.service loaded failed failed Postfix Mail Transport Agent

   ----------------------------------------------------------
   13. Services, from systemctl list-unit-files
     STATE           UNIT FILES
     enabled         apparmor auditd cron getty@ irqbalance issue-generator kbdsettings kdump kdump-early
                     kdump-notify postfix purge-kernels rollback sshd systemd-pstore wicked wickedd-auto4
                     wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
     enabled-runtime systemd-remount-fs
     disabled        boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell ebtables
                     firewalld fsidd grub2-once haveged issue-add-ssh-keys kexec-load lunmask nfs nfs-blkmap
                     rpcbind rpmconfigcheck serial-getty@ systemd-boot-check-no-failures systemd-confext
                     systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
     indirect        systemd-userdbd wickedd

   ----------------------------------------------------------
   14. Linux kernel boot-time arguments, from /proc/cmdline
     BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
     root=UUID=d4e057bf-4e4b-4e72-b0d4-5cbb8854b3eb
     splash=silent
     mitigations=auto
     quiet
     security=apparmor
     crashkernel=364M,high
     crashkernel=72M,low

   ----------------------------------------------------------
   15. cpupower frequency-info
     analyzing CPU 303:
       current policy: frequency should be within 800 MHz and 3.80 GHz.
                       The governor "performance" may decide which speed to use
                       within this range.
       boost state support:
         Supported: yes
         Active: yes

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

   ----------------------------------------------------------
   17. sysctl
     kernel.numa_balancing           1
     kernel.randomize_va_space       2
     vm.compaction_proactiveness     20
     vm.dirty_background_bytes       0
     vm.dirty_background_ratio       3
     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
```

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Platform Notes (Continued)

```
  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 SUSE Linux Enterprise Server 15 SP6


  ----------------------------------------------------------------
21. Disk information
SPEC is set to: /home/cpu2017
  Filesystem      Type   Size  Used Avail Use% Mounted on
  /dev/sda2       btrfs  222G   11G  208G   5% /home


  ----------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
  Vendor:        Cisco Systems Inc
  Product:       UCSC-C220-M8S
  Serial:        WZP28479TTU


  ----------------------------------------------------------------
23. 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:
    4x 0xCE00 M321R8GA0PB2-CCPEC 64 GB 2 rank 6400
    12x 0xCE00 M321R8GA0PB2-CCPKC 64 GB 2 rank 6400



  ----------------------------------------------------------------
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
  BIOS Vendor:        Cisco Systems, Inc.
  BIOS Version:       C220M8.4.3.6b.0.0430251037
  BIOS Date:          04/30/2025
  BIOS Revision:      5.35
```

Compiler Version Notes

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

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Test Sponsor:	Cisco Systems	**Hardware Availability:**	Feb-2025
Tested by:	Cisco Systems	**Software Availability:**	Jun-2024

Compiler Version Notes (Continued)

```
--------------------------------------------------------------------------------
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)
--------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308
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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
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--------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`icx`

C++ benchmarks:
`icpx`

Fortran benchmarks:
`ifx`

SPEC CPU®2017 Integer Rate Result

Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6787P 2.0 GHz processor)

SPECrate®2017_int_base = 1430

SPECrate®2017_int_peak = 1480

CPU2017 License: 9019
Test Sponsor: Cisco Systems
Tested by: Cisco Systems

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

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/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
```

https://www.spec.org/

SPEC CPU®2017 Integer Rate Result

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Cisco Systems

Cisco UCS C220 M8 (Intel Xeon 6787P 2.0 GHz processor)

SPECrate®2017_int_base = 1430

SPECrate®2017_int_peak = 1480

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/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`

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Test Date: Nov-2025
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Software Availability: Jun-2024

Peak Optimization Flags (Continued)

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-linux64.2025-06-17.html`
`http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V2.0-GNR-revI.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2025-06-17.xml`
`http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V2.0-GNR-revI.xml`

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

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