



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

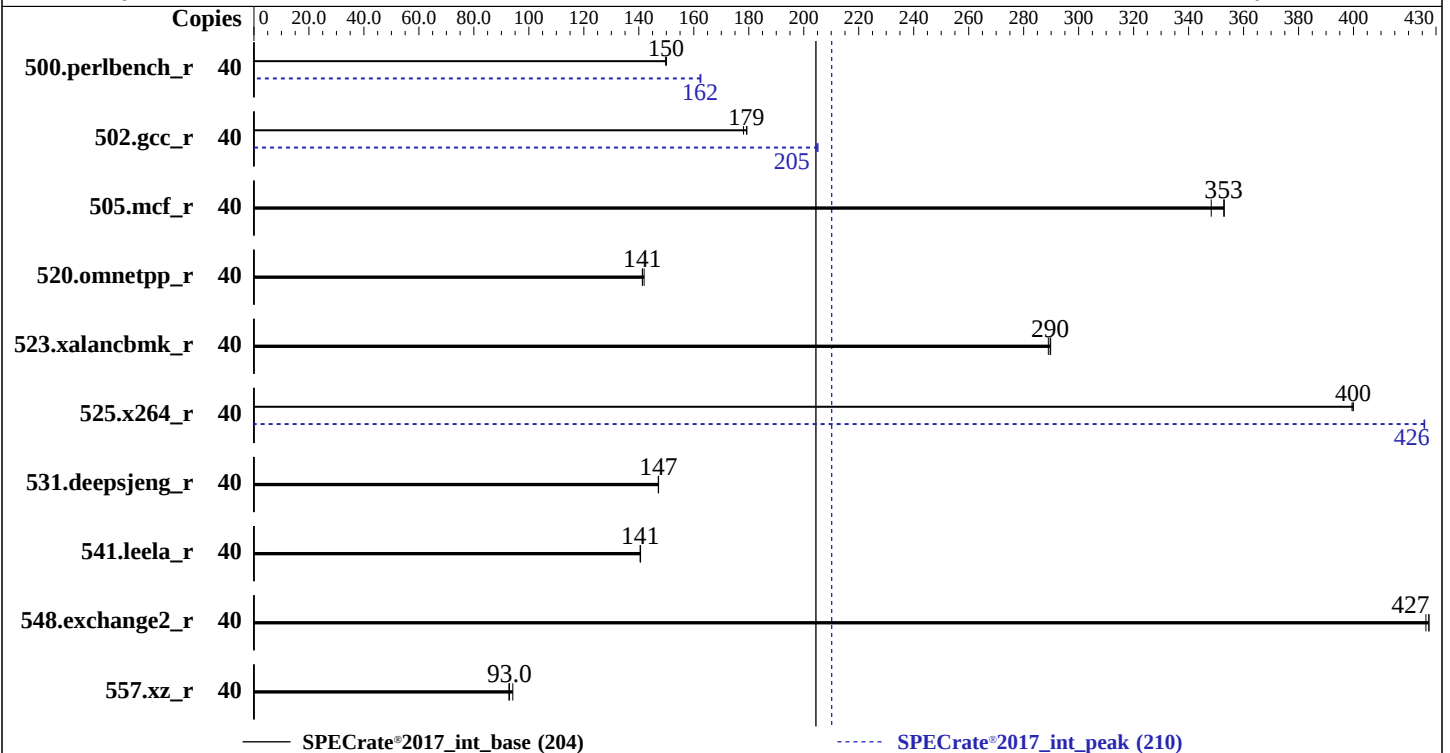
Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024



Hardware

CPU Name: Intel Xeon Silver 4410T
Max MHz: 4000
Nominal: 2700
Enabled: 20 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: 26.25 MB I+D on chip per chip
Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R, running at 4000)
Storage: 960 GB SATA SSD
Other: CPU Cooling: Air

Software

OS: Ubuntu 22.04.5 LTS
6.8.0-49-generic
Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version EG0.10.01 released Mar-2024
File System: ext4
System State: Run level 5 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS set to prefer performance at the expense of additional power usage



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	40	424	150	<u>425</u>	<u>150</u>	425	150	40	<u>392</u>	<u>162</u>	392	162	392	163
502.gcc_r	40	316	179	318	178	<u>316</u>	<u>179</u>	40	<u>276</u>	<u>205</u>	276	205	277	205
505.mcf_r	40	183	353	<u>183</u>	<u>353</u>	186	348	40	183	353	<u>183</u>	<u>353</u>	186	348
520.omnetpp_r	40	370	142	371	141	<u>371</u>	<u>141</u>	40	370	142	371	141	<u>371</u>	<u>141</u>
523.xalancbmk_r	40	<u>146</u>	<u>290</u>	146	289	146	290	40	<u>146</u>	<u>290</u>	146	289	146	290
525.x264_r	40	175	400	<u>175</u>	<u>400</u>	175	399	40	164	426	165	426	<u>164</u>	<u>426</u>
531.deepsjeng_r	40	312	147	<u>312</u>	<u>147</u>	311	147	40	312	147	<u>312</u>	<u>147</u>	311	147
541.leela_r	40	<u>471</u>	<u>141</u>	471	141	471	141	40	<u>471</u>	<u>141</u>	471	141	471	141
548.exchange2_r	40	246	426	245	427	<u>245</u>	<u>427</u>	40	246	426	245	427	<u>245</u>	<u>427</u>
557.xz_r	40	466	92.7	<u>465</u>	<u>93.0</u>	459	94.2	40	466	92.7	<u>465</u>	<u>93.0</u>	459	94.2

SPECrate®2017_int_base = 204

SPECrate®2017_int_peak = 210

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/speccpu/cpu2017/lib/intel64:/home/speccpu/cpu2017/lib/ia32:/home/speccpu/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>
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>



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes

BIOS settings

Enable SNC2 (2-Clusters)

Sysinfo program /home/speccpu/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on intel Wed Feb 5 12:58:28 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 249 (249.11-0ubuntu3.12)
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. 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 intel 6.8.0-49-generic #49~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Wed Nov 6 17:42:15 UTC 2 x86_64 x86_64 x86_64 GNU/Linux

2. w
12:58:28 up 2 days, 2:13, 2 users, load average: 0.52, 0.48, 0.24
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
intel :1 :1 Mon10 ?xdm? 1:52m 0.00s /usr/libexec/gdm-x-session --run-script env
GNOME_SHELL_SESSION_MODE=ubuntu /usr/bin/gnome-session --session=ubuntu
intel pts/1 - 12:58 3.00s 1.40s 0.00s sudo
./reportable-ic2023.2.3-lin-sapphirerapids-rate-smt-on-20231121.sh

3. Username
From environment variable \$USER: root
From the command 'logname': intel

4. ulimit -a
time(seconds) unlimited
file(blocks) unlimited

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes (Continued)

```
data(kbytes)      unlimited
stack(kbytes)     unlimited
coredump(blocks)  0
memory(kbytes)    unlimited
locked memory(kbytes) 132062276
process           4126642
nofiles           1024
vmemory(kbytes)   unlimited
locks             unlimited
rtprio            0
```

```
-----
5. sysinfo process ancestry
/sbin/init splash
/lib/systemd/systemd --user
/usr/libexec/gnome-terminal-server
bash
sudo ./reportable-ic2023.2.3-lin-sapphirerapids-rate-smt-on-20231121.sh
sudo ./reportable-ic2023.2.3-lin-sapphirerapids-rate-smt-on-20231121.sh
sh ./reportable-ic2023.2.3-lin-sapphirerapids-rate-smt-on-20231121.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=40 -c
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=20 --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=40 --configfile
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=20 --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/CPU2017.039/temlogs/preenv.intrate.039.0.log --lognum 039.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Silver 4410T
vendor_id       : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 8
microcode       : 0x2b000603
bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
cpu cores       : 10
siblings        : 20
2 physical ids (chips)
40 processors (hardware threads)
physical id 0:  core ids 0-9
physical id 1:  core ids 0-9
physical id 0:  apicids 0-19
physical id 1:  apicids 128-147
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 2.37.2:

```
Architecture:      x86_64
CPU op-mode(s):    32-bit, 64-bit
Address sizes:      52 bits physical, 57 bits virtual
Byte Order:         Little Endian
CPU(s):             40
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes (Continued)

On-line CPU(s) list: 0-39
Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Silver 4410T
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 10
Socket(s): 2
Stepping: 8
CPU max MHz: 4000.0000
CPU min MHz: 800.0000
BogoMIPS: 5400.00
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 aperfperf tsc_known_freq pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 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 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 hfi vnmi 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
Virtualization: VT-x
L1d cache: 960 KiB (20 instances)
L1i cache: 640 KiB (20 instances)
L2 cache: 40 MiB (20 instances)
L3 cache: 52.5 MiB (2 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-4,20-24
NUMA node1 CPU(s): 5-9,25-29
NUMA node2 CPU(s): 10-14,30-34
NUMA node3 CPU(s): 15-19,35-39
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 SW sequence; 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	960K	12	Data	1	64	1	64

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes (Continued)

L1i	32K	640K	8 Instruction	1	64	1	64
L2	2M	40M	16 Unified	2	2048	1	64
L3	26.3M	52.5M	15 Unified	3	28672	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: 0-4,20-24
node 0 size: 257650 MB
node 0 free: 254783 MB
node 1 cpus: 5-9,25-29
node 1 size: 258044 MB
node 1 free: 256784 MB
node 2 cpus: 10-14,30-34
node 2 size: 258044 MB
node 2 free: 256496 MB
node 3 cpus: 15-19,35-39
node 3 size: 257997 MB
node 3 free: 255483 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: 1056498212 kB

10. who -r

run-level 5 Feb 3 10:46

11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.12)

Default Target Status
graphical degraded

12. Failed units, from systemctl list-units --state=failed

UNIT	LOAD	ACTIVE	SUB	DESCRIPTION
* NetworkManager-wait-online.service	loaded	failed	failed	Network Manager Wait Online

13. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon anacron anydesk apparmor avahi-daemon bluetooth console-setup cron cups cups-browsed dmesg e2scrub_reap getty@ gpu-manager grub-common grub-initrd-fallback irqbalance kerneloops keyboard-setup networkd-dispatcher openvpn power-profiles-daemon rsyslog secureboot-db setvtrgb snapd ssh switcheroo-control systemd-oond systemd-pstore systemd-resolved systemd-timesyncd teamviewerd thermald ua-reboot-cmds ubuntu-advantage udisks2 ufw unattended-upgrades wpa_supplicant
enabled-runtime	netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled	acpid brltty console-getty debug-shell nftables openvpn-client@ openvpn-server@ openvpn@ rsync rtkit-daemon serial-getty@ speech-dispatcherd systemd-boot-check-no-failures systemd-network-generator systemd-networkd systemd-networkd-wait-online systemd-sysext systemd-time-wait-sync tlp upower wpa_supplicant-nl80211@ wpa_supplicant-wired@

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes (Continued)

```
generated      wpa_supplicant@
indirect       apport cpufrequtils loadcpufreq speech-dispatcher
masked         saned@ spice-vdagentd uidd
               alsas-utils cryptdisks cryptdisks-early hwclock pulseaudio-enable-autospawn rc rcS saned
               screen-cleanup sudo systemd-rfkill x11-common
```

14. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=/boot/vmlinuz-6.8.0-49-generic
root=UUID=073562bb-1438-42b9-adfa-6a6f7f3d3559
ro
quiet
splash
vt.handoff=7
```

15. cpupower frequency-info

```
analyzing CPU 6:
  current policy: frequency should be within 800 MHz and 4.00 GHz.
                  The governor "ondemand" may decide which speed to use
                  within this range.

boost state support:
  Supported: yes
  Active: yes
```

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                60
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+madvice [madvice] never
enabled     always [madvice] 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
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Platform Notes (Continued)

```
max_ptes_swap      64
pages_to_scan      4096
scan_sleep_millisecs 10000
```

19. OS release

```
From /etc/*-release /etc/*-version
os-release Ubuntu 22.04.5 LTS
```

20. Disk information

SPEC is set to: /home/speccpu/cpu2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda2	ext4	879G	684G	151G	83%	/

21. /sys/devices/virtual/dmi/id

```
Vendor:      Fusionstor
Product:     Invento_i6000
Product Family: SG_Intel_EagleStream
Serial:      HQ3110001BDA03CD0002
```

22. dmidecode

Additional information from dmidecode 3.3 follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

```
16x NO DIMM NO DIMM
16x Samsung M321R8GA0BB0-CQKZJ 64 GB 2 rank 4800, configured at 4000
```

23. BIOS

(This section combines info from /sys/devices and dmidecode.)

```
BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     EG0.10.01
BIOS Date:        03/22/2024
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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

```
=====  
C      | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)  
      | 557.xz_r(base, peak)  
=====
```

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Compiler Version Notes (Continued)

C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
| 557.xz_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

Fortran | 548.exchange2_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Base Portability Flags (Continued)

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Peak Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

Peak Portability Flags (Continued)

```
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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo
```

```
502.gcc_r: -m32
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/ia32_lin
-std=gnu89 -Wl, -z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc
```

```
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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo
```

```
557.xz_r: basepeak = yes
```

C++ benchmarks:

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Fusionstor

(Test Sponsor: Meganet)

SPECrate®2017_int_base = 204

Invento i6000 (Intel Xeon Silver 4410T)

SPECrate®2017_int_peak = 210

CPU2017 License: 6221

Test Sponsor: Meganet

Tested by: FusionStor

Test Date: Feb-2025

Hardware Availability: Dec-2022

Software Availability: Nov-2024

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-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Fusionstor-Platform-Flags-Intel-ICX-rev6.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Fusionstor-Platform-Flags-Intel-ICX-rev6.xml>

SPEC CPU and SPECrate are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.9 on 2025-02-05 02:28:27-0500.

Report generated on 2025-04-22 12:00:02 by CPU2017 PDF formatter v6716.

Originally published on 2025-04-22.