



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd.  
(IEI)

SPECrate®2017\_int\_base = 958

NF5280M7 (Intel Xeon Platinum 8480+)

SPECrate®2017\_int\_peak = 994

CPU2017 License: 3358

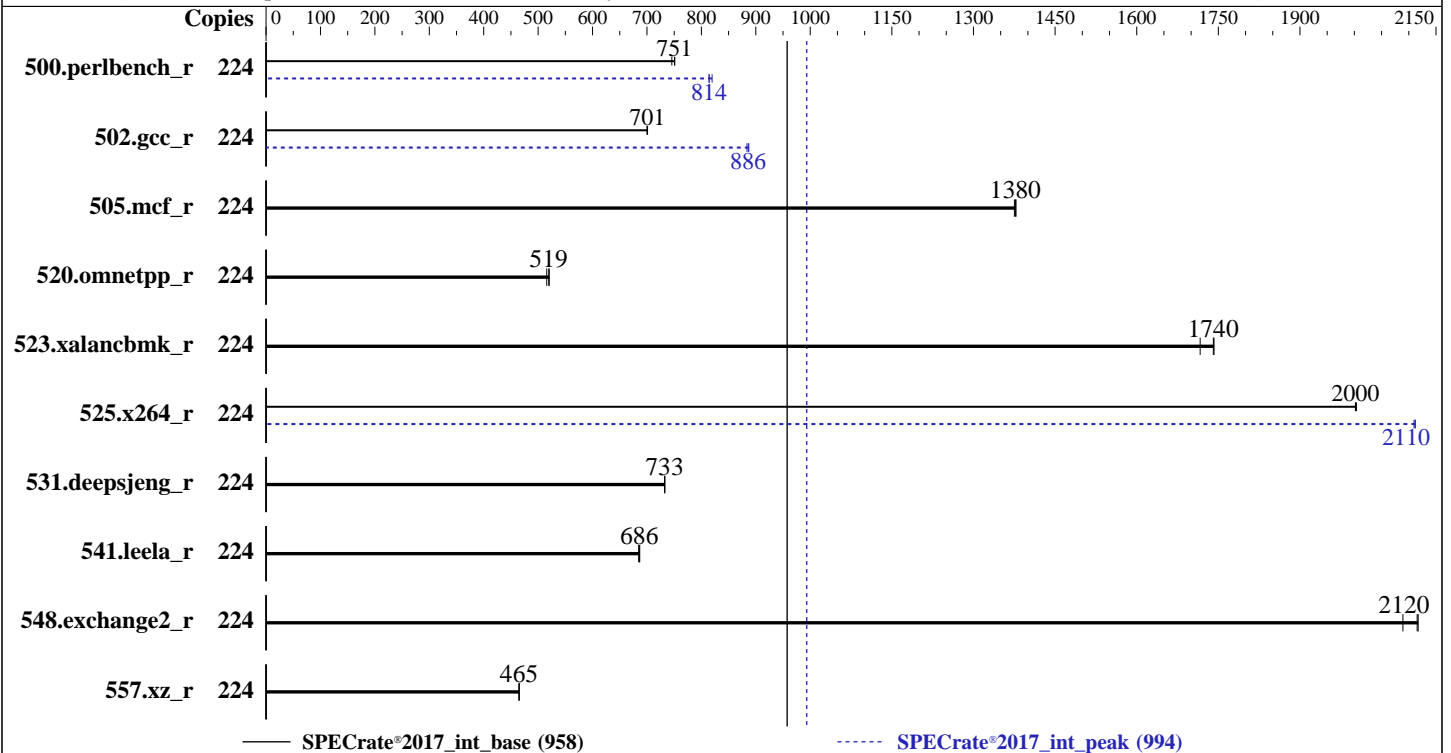
Test Date: Mar-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Hardware Availability: Apr-2023

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Software Availability: Feb-2023



## Hardware

CPU Name: Intel Xeon Platinum 8480+  
 Max MHz: 3800  
 Nominal: 2000  
 Enabled: 112 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: 105 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC5-4800B-R)  
 Storage: 1 x 1 TB NVME SSD  
 Other: None

## Software

OS: Red Hat Enterprise Linux 9.0 (Plow)  
 5.14.0-70.22.1.el9\_0.x86\_64  
 Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++  
 Compiler for Linux;  
 Fortran: Version 2023.0 of Intel Fortran Compiler  
 for Linux;  
 Parallel: No  
 Firmware: Version 03.01.00 released Dec-2022  
 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	224	<b>475</b>	<b>751</b>	478	746	475	751	224	438	814	<b>438</b>	<b>814</b>	435	820
502.gcc_r	224	<b>453</b>	<b>701</b>	452	701	453	700	224	358	887	<b>358</b>	<b>886</b>	359	884
505.mcf_r	224	263	1380	<b>263</b>	<b>1380</b>	263	1380	224	263	1380	<b>263</b>	<b>1380</b>	263	1380
520.omnetpp_r	224	<b>566</b>	<b>519</b>	570	516	565	520	224	<b>566</b>	<b>519</b>	570	516	565	520
523.xalancbmk_r	224	136	1740	138	1720	<b>136</b>	<b>1740</b>	224	136	1740	138	1720	<b>136</b>	<b>1740</b>
525.x264_r	224	196	2000	<b>196</b>	<b>2000</b>	196	2000	224	<b>186</b>	<b>2110</b>	186	2110	186	2110
531.deepsjeng_r	224	350	733	<b>350</b>	<b>733</b>	350	733	224	350	733	<b>350</b>	<b>733</b>	350	733
541.leela_r	224	542	685	<b>541</b>	<b>686</b>	540	687	224	542	685	<b>541</b>	<b>686</b>	540	687
548.exchange2_r	224	281	2090	<b>277</b>	<b>2120</b>	277	2120	224	281	2090	<b>277</b>	<b>2120</b>	277	2120
557.xz_r	224	520	465	520	465	<b>520</b>	<b>465</b>	224	520	465	520	465	<b>520</b>	<b>465</b>

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

## Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalancbmk\_r / 623.xalancbmk\_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 [https://www.spec.org/cpu2017/Docs/runrules.html#rule\\_1.4](https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4)), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

## 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"  
MALLOCONF = "retain:true"



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## 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) 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 configuration:  
 ENERGY\_PERF\_BIAS\_CFG mode set to Performance  
 Hardware Prefetch set to Disable  
 VT Support set to Disable  
 Sub NUMA Cluster (SNC) set to SNC4

Sysinfo program /home/CPU2017/bin/sysinfo  
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
 running on localhost.localdomain Mon Mar 20 05:22:44 2023

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 250 (250-6.el9_0)`
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`

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## Platform Notes (Continued)

23. BIOS

```
1. uname -a
Linux localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux
```

```
2. w
05:22:44 up 4 min, 1 user, load average: 0.00, 0.03, 0.00
USER      TTY      LOGIN@  IDLE   JCPU   PCPU   WHAT
root      tty1    05:22   12.00s  0.90s  0.00s  -bash
```

```
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) 2062063
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) 2062063
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited
```

```
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=224 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=112 --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=224 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=112 --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/CPU2017.003/templogs/preenv.intrate.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017
```

```
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Platinum 8480+
vendor_id      : GenuineIntel
cpu family     : 6
```

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## Platform Notes (Continued)

```

model          : 143
stepping       : 6
microcode      : 0x2b000130
bugs           : spectre_v1 spectre_v2 spec_store_bypass swappg
cpu cores      : 56
siblings       : 112
2 physical ids (chips)
224 processors (hardware threads)
physical id 0: core ids 0-55
physical id 1: core ids 0-55
physical id 0: apicids 0-111
physical id 1: apicids 128-239

```

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

### 7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:         46 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                224
On-line CPU(s) list:  0-223
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Platinum 8480+
BIOS Model name:      Intel(R) Xeon(R) Platinum 8480+
CPU family:            6
Model:                143
Thread(s) per core:   2
Core(s) per socket:   56
Socket(s):            2
Stepping:              6
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 monitor
                      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 invpcid_single
                      intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced 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 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 avx512_fp16 amx_tile flush_lld arch_capabilities
L1d cache:            5.3 MiB (112 instances)
L1i cache:            3.5 MiB (112 instances)
L2 cache:             224 MiB (112 instances)
L3 cache:             210 MiB (2 instances)
NUMA node(s):        8

```

(Continued on next page)



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## Platform Notes (Continued)

```

NUMA node0 CPU(s):      0-13,112-125
NUMA node1 CPU(s):      14-27,126-139
NUMA node2 CPU(s):      28-41,140-153
NUMA node3 CPU(s):      42-55,154-167
NUMA node4 CPU(s):      56-69,168-181
NUMA node5 CPU(s):      70-83,182-195
NUMA node6 CPU(s):      84-97,196-209
NUMA node7 CPU(s):      98-111,210-223
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:      Not affected
Vulnerability Mds:       Not affected
Vulnerability Meltdown:  Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
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	5.3M	12	Data	1	64	1	64
L1i	32K	3.5M	8	Instruction	1	64	1	64
L2	2M	224M	16	Unified	2	2048	1	64
L3	105M	210M	15	Unified	3	114688	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```

available: 8 nodes (0-7)
node 0 cpus: 0-13,112-125
node 0 size: 64070 MB
node 0 free: 63285 MB
node 1 cpus: 14-27,126-139
node 1 size: 64505 MB
node 1 free: 64244 MB
node 2 cpus: 28-41,140-153
node 2 size: 64505 MB
node 2 free: 64262 MB
node 3 cpus: 42-55,154-167
node 3 size: 64505 MB
node 3 free: 64259 MB
node 4 cpus: 56-69,168-181
node 4 size: 64505 MB
node 4 free: 63695 MB
node 5 cpus: 70-83,182-195
node 5 size: 64469 MB
node 5 free: 64243 MB
node 6 cpus: 84-97,196-209
node 6 size: 64505 MB
node 6 free: 64256 MB
node 7 cpus: 98-111,210-223
node 7 size: 64486 MB
node 7 free: 64229 MB
node distances:
node  0  1  2  3  4  5  6  7
0:  10 12 12 12 21 21 21 21
1:  12 10 12 12 21 21 21 21
2:  12 12 10 12 21 21 21 21
3:  12 12 12 10 21 21 21 21
4:  21 21 21 21 10 12 12 12

```

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## Platform Notes (Continued)

5:	21	21	21	21	12	10	12	12
6:	21	21	21	21	12	12	10	12
7:	21	21	21	21	12	12	12	10

```
-----
9. /proc/meminfo
   MemTotal:      527929264 kB
```

```
-----
10. who -r
    run-level 3 Mar 20 05:18
```

```
-----
11. Systemd service manager version: systemd 250 (250-6.el9_0)
    Default Target   Status
    multi-user       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
* sep5.service                         loaded failed failed systemd script to load sep5 driver at boot time
```

```
-----
13. Services, from systemctl list-unit-files
    STATE      UNIT FILES
enabled      NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
             dbus-broker firewallld getty@ irqbalance kdump lvm2-monitor mdmonitor microcode
             nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sep5 sshd sssd
             systemd-network-generator udisks2 upower
enabled-runtime
disabled     blk-availability canberra-system-bootup canberra-system-shutdown
             canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell kvm_stat
             man-db-restart-cache-update nftables rdisc rhsm rhsm-facts rpmdb-rebuild serial-getty@
             sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysex
indirect     sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
```

```
-----
14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
```

```
-----
15. cpupower frequency-info
    analyzing CPU 0:
      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. sysctl
    kernel.numa_balancing      1
    kernel.randomize_va_space  2
```

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## Platform Notes (Continued)

```

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+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 9.0 (Plow)
redhat-release       Red Hat Enterprise Linux release 9.0 (Plow)
system-release       Red Hat Enterprise Linux release 9.0 (Plow)

```

```

-----
20. Disk information
SPEC is set to: /home/CPU2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   819G  140G  679G  18% /home

```

```

-----
21. /sys/devices/virtual/dmi/id
Vendor:          Inspur
Product:         NF5280M7
Product Family:  Not specified
Serial:          000000000

```

```

-----
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

```

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## Platform Notes (Continued)

"DMTF SMBIOS" standard.

Memory:

16x Samsung M321R4GA3BB6-CQKVG 32 GB 2 rank 4800

-----  
23. BIOS

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

BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 03.01.00  
BIOS Date: 12/29/2022

## Compiler Version Notes

=====  
C | 502.gcc\_r(peak)

-----  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201  
Copyright (C) 1985-2022 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 2023.0.0 Build 20221201  
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=====  
C | 502.gcc\_r(peak)

-----  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201  
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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 2023.0.0 Build 20221201  
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=====  
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 2023.0.0 Build 20221201  
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=====  
Fortran | 548.exchange2\_r(base, peak)

-----  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201  
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# SPEC CPU®2017 Integer Rate Result

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Inspur Electronic Information Industry Co., Ltd.  
(IEI)

SPECrate®2017\_int\_base = 958

NF5280M7 (Intel Xeon Platinum 8480+)

SPECrate®2017\_int\_peak = 994

**CPU2017 License:** 3358

**Test Date:** Mar-2023

**Test Sponsor:** Inspur Electronic Information Industry Co., Ltd. (IEI)

**Hardware Availability:** Apr-2023

**Tested by:** Inspur Electronic Information Industry Co., Ltd. (IEI)

**Software Availability:** Feb-2023

## 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 -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```



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Software Availability: Feb-2023

## 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.profddata(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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc

502.gcc_r: -m32
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profddata(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

```

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Software Availability: Feb-2023

## Peak Optimization Flags (Continued)

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/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmallocc
```

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-ic2023-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.xml>

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