



SPEC CPU®2017 Integer Rate Result

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Supermicro

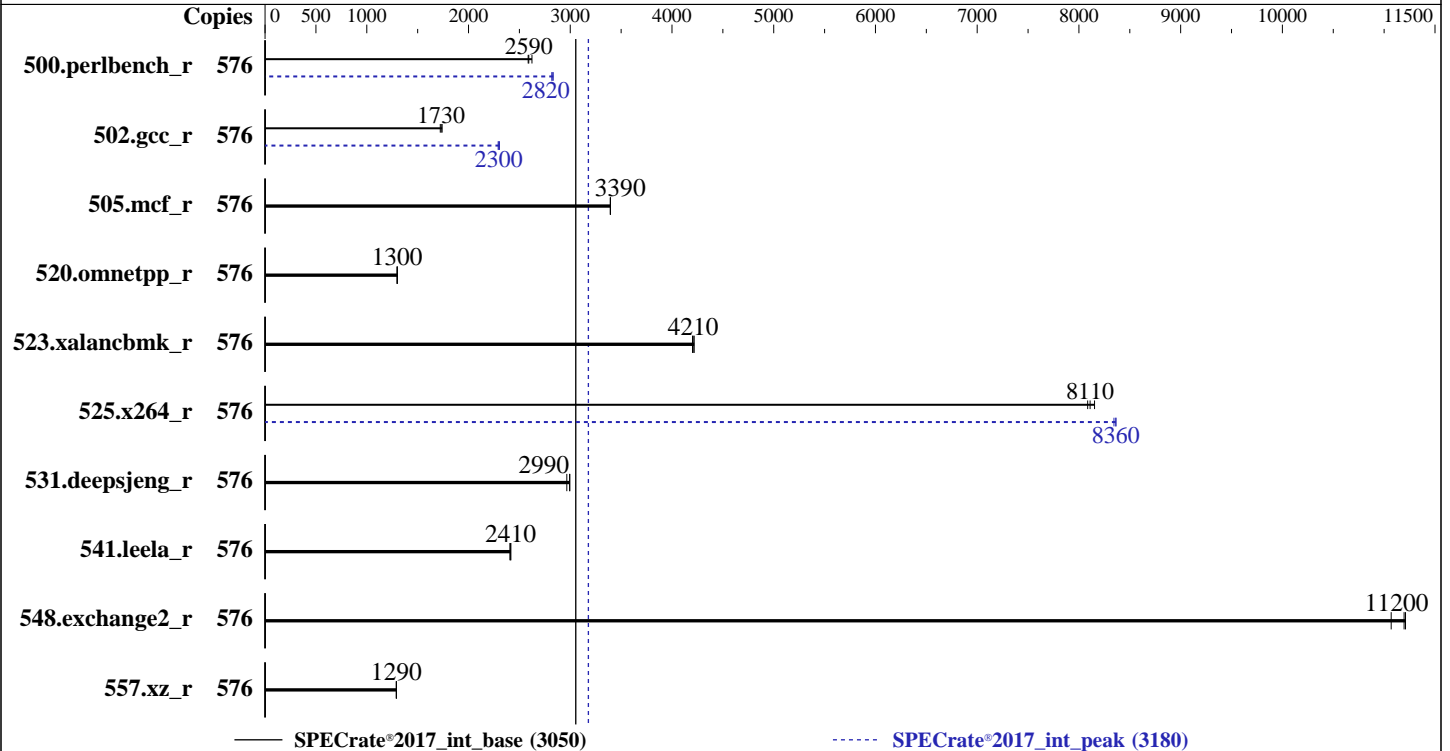
SuperServer SYS-122HA-TN-LCC
(X14DBM-APL , Intel Xeon 6990E+)

SPECrate®2017_int_base = 3050

SPECrate®2017_int_peak = 3180

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

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



Hardware

CPU Name: Intel Xeon 6990E+
Max MHz: 3200
Nominal: 2200
Enabled: 576 cores, 2 chips
Orderable: 1, 2 chips
Cache L1: 64 KB I + 32 KB D on chip per core
L2: 4 MB I+D on chip per core
L3: 576 MB I+D on chip per chip
Other: None
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-8000B-R)
Storage: 1 x 1.92TB NVMe SSD
Other: CPU Cooling: DLC

Software

OS: SUSE Linux Enterprise Server 15 SP7
6.4.0-150700.51-default
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 2.0 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 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	576	350	2620	355	2590	354	2590	576	325	2820	324	2830	325	2820
502.gcc_r	576	474	1720	469	1740	471	1730	576	355	2300	356	2290	354	2300
505.mcf_r	576	274	3390	274	3400	274	3390	576	274	3390	274	3400	274	3390
520.omnetpp_r	576	582	1300	582	1300	582	1300	576	582	1300	582	1300	582	1300
523.xalancbmk_r	576	145	4200	145	4210	144	4220	576	145	4200	145	4210	144	4220
525.x264_r	576	124	8150	124	8110	125	8090	576	121	8340	121	8360	121	8360
531.deepsjeng_r	576	220	2990	223	2970	220	3000	576	220	2990	223	2970	220	3000
541.leela_r	576	396	2410	395	2410	395	2420	576	396	2410	395	2410	395	2420
548.exchange2_r	576	135	11200	135	11200	136	11100	576	135	11200	135	11200	136	11100
557.xz_r	576	482	1290	482	1290	482	1290	576	482	1290	482	1290	482	1290

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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) is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation

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General Notes (Continued)

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:

Power Performance Tuning = BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode = Extreme Performance

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on 182-145 Thu May 14 18:46:05 2026

SUT (System Under Test) info as seen by some common utilities.

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1. uname -a
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3. Username
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6. /proc/cpuinfo
7. lscpu
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9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 254 (254.24+suse.148.g83b9060b6e)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

```

1. uname -a
Linux 182-145 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611) x86_64
x86_64 x86_64 GNU/Linux

```

```

2. w
18:46:05 up 17 min,  1 user,  load average: 0.02, 0.46, 0.61
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU WHAT
root     tty1      -             18:29    5.00s  1.29s  0.01s -bash

```

```

3. Username
From environment variable $USER:  root

```

```

4. ulimit -a

```

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Platform Notes (Continued)

```

core file size      (blocks, -c) unlimited
data seg size      (kbytes, -d) unlimited
scheduling priority (-e) 0
file size          (blocks, -f) unlimited
pending signals    (-i) 6189164
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) 6189164
virtual memory    (kbytes, -v) unlimited
file locks        (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=576 -c
  ic2026.0-lin-clearwaterforest-rate-20260429.cfg --define smt-on --define cores=576 --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=576 --configfile
  ic2026.0-lin-clearwaterforest-rate-20260429.cfg --define smt-on --define cores=576 --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) 6990E+
vendor_id      : GenuineIntel
cpu family     : 6
model          : 221
stepping       : 1
microcode      : 0x1000120
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 288
siblings       : 288
2 physical ids (chips)
576 processors (hardware threads)
physical id 0: core ids 0-95,128-223,256-351
physical id 1: core ids 0-95,128-223,256-351
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
32,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,18
4,186,188,190,256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300
,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,
354,356,358,360,362,364,366,368,370,372,374,376,378,380,382,384,386,388,390,392,394,396,398,400,402,404,4
06,408,410,412,414,416,418,420,422,424,426,428,430,432,434,436,438,440,442,444,446,512,514,516,518,520,52
2,524,526,528,530,532,534,536,538,540,542,544,546,548,550,552,554,556,558,560,562,564,566,568,570,572,574
,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,
628,630,632,634,636,638,640,642,644,646,648,650,652,654,656,658,660,662,664,666,668,670,672,674,676,678,6

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Platform Notes (Continued)

80,682,684,686,688,690,692,694,696,698,700,702

physical id 1: apicids

1024,1026,1028,1030,1032,1034,1036,1038,1040,1042,1044,1046,1048,1050,1052,1054,1056,1058,1060,1062,1064,1066,1068,1070,1072,1074,1076,1078,1080,1082,1084,1086,1088,1090,1092,1094,1096,1098,1100,1102,1104,1106,1108,1110,1112,1114,1116,1118,1120,1122,1124,1126,1128,1130,1132,1134,1136,1138,1140,1142,1144,1146,1148,1150,1152,1154,1156,1158,1160,1162,1164,1166,1168,1170,1172,1174,1176,1178,1180,1182,1184,1186,1188,1190,1192,1194,1196,1198,1200,1202,1204,1206,1208,1210,1212,1214,1216,1218,1220,1222,1224,1226,1228,1230,1232,1234,1236,1238,1240,1242,1244,1246,1248,1250,1252,1254,1256,1258,1260,1262,1264,1266,1268,1270,1272,1274,1276,1278,1280,1282,1284,1286,1288,1290,1292,1294,1296,1298,1300,1302,1304,1306,1308,1310,1312,1314,1316,1318,1320,1322,1324,1326,1328,1330,1332,1334,1336,1338,1340,1342,1344,1346,1348,1350,1352,1354,1356,1358,1360,1362,1364,1366,1368,1370,1372,1374,1376,1378,1380,1382,1384,1386,1388,1390,1392,1394,1396,1398,1400,1402,1404,1406,1408,1410,1412,1414,1416,1418,1420,1422,1424,1426,1428,1430,1432,1434,1436,1438,1440,1442,1444,1446,1448,1450,1452,1454,1456,1458,1460,1462,1464,1466,1468,1470,1472,1474,1476,1478,1480,1482,1484,1486,1488,1490,1492,1494,1496,1498,1500,1502,1504,1506,1508,1510,1512,1514,1516,1518,1520,1522,1524,1526,1528,1530,1532,1534,1536,1538,1540,1542,1544,1546,1548,1550,1552,1554,1556,1558,1560,1562,1564,1566,1568,1570,1572,1574,1576,1578,1580,1582,1584,1586,1588,1590,1592,1594,1596,1598,1600,1602,1604,1606,1608,1610,1612,1614,1616,1618,1620,1622,1624,1626,1628,1630,1632,1634,1636,1638,1640,1642,1644,1646,1648,1650,1652,1654,1656,1658,1660,1662,1664,1666,1668,1670,1672,1674,1676,1678,1680,1682,1684,1686,1688,1690,1692,1694,1696,1698,1700,1702,1704,1706,1708,1710,1712,1714,1716,1718,1720,1722,1724,1726

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 2.40.4:

```

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):               576
On-line CPU(s) list: 0-575
Vendor ID:            GenuineIntel
Model name:           Intel(R) Xeon(R) 6990E+
CPU family:           6
Model:                221
Thread(s) per core:  1
Core(s) per socket:  288
Socket(s):            2
Stepping:             1
BogoMIPS:             4400.00
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 vmmi 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_lld arch_capabilities

Virtualization:       VT-x
L1d cache:            18 MiB (576 instances)
L1i cache:            36 MiB (576 instances)
L2 cache:             576 MiB (144 instances)
L3 cache:             1.1 GiB (2 instances)
NUMA node(s):        6

```

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Platform Notes (Continued)

```

NUMA node0 CPU(s):          0-95
NUMA node1 CPU(s):          96-191
NUMA node2 CPU(s):          192-287
NUMA node3 CPU(s):          288-383
NUMA node4 CPU(s):          384-479
NUMA node5 CPU(s):          480-575
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/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2:         Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling;
                                   PBR SB-eIBRS Not affected; BHI Not affected
Vulnerability Srbds:              Not affected
Vulnerability Tsx async abort:    Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	32K	18M	8	Data	1	64	1	64
L1i	64K	36M	8	Instruction	1	128	1	64
L2	4M	576M	16	Unified	2	4096	1	64
L3	576M	1.1G	16	Unified	3	589824	1	64

8. numactl --hardware

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

```

available: 6 nodes (0-5)
node 0 cpus: 0-95
node 0 size: 257400 MB
node 0 free: 255414 MB
node 1 cpus: 96-191
node 1 size: 258022 MB
node 1 free: 249571 MB
node 2 cpus: 192-287
node 2 size: 258022 MB
node 2 free: 256720 MB
node 3 cpus: 288-383
node 3 size: 258022 MB
node 3 free: 257526 MB
node 4 cpus: 384-479
node 4 size: 258022 MB
node 4 free: 257464 MB
node 5 cpus: 480-575
node 5 size: 257828 MB
node 5 free: 257263 MB
node distances:
node  0  1  2  3  4  5
0:  10 15 17 21 28 26
1:  15 10 15 23 26 23
2:  17 15 10 26 23 21
3:  21 28 26 10 15 17
4:  23 26 23 15 10 15
5:  26 23 21 17 15 10

```

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Platform Notes (Continued)

9. /proc/meminfo
MemTotal: 1584455352 kB

10. who -r
run-level 3 May 14 18:45 last=5

11. Systemd service manager version: systemd 254 (254.24+suse.148.g83b9060b6e)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	YaST2-Firstboot YaST2-Second-Stage apparmor apstream-sync-cache auditd bluetooth cron display-manager getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor nscd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime	systemd-remount-fs
disabled	accounts-daemon autofs autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info firewalld fsidd gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb ostree-remount ostree-state-overlay@ rpcbind rpmconfigcheck rsyncd rtkit-daemon samba-bgq serial-getty@ smartd-generate_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2 update-system-flatpaks upower vncserver@
indirect	systemd-userdbd wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
root=UUID=a01dde6d-ca13-4c27-8508-91fa7301d7f7
splash=silent
mitigations=auto
quiet
security=apparmor

14. cpupower frequency-info
analyzing CPU 275:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

15. 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

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```

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

```

```

-----
16. /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

```

```

-----
17. /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

```

```

-----
18. OS release
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP7

```

```

-----
19. Disk information
SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p3 xfs 800G 236G 565G 30% /home

```

```

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

```

```

-----
21. 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:
24x Samsung MDRR644QEBC2-5R000 64 GB 2 rank 8000

```

```

-----
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 2.0

```

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SPEC CPU®2017 Integer Rate Result

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Supermicro

SuperServer SYS-122HA-TN-LCC
(X14DBM-APL , Intel Xeon 6990E+)

SPECrate®2017_int_base = 3050

SPECrate®2017_int_peak = 3180

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

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

Platform Notes (Continued)

BIOS Date: 05/06/2026
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
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=====

=====
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
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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 2026.0.0 Build 20260331
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=====

=====
Fortran | 548.exchange2_r(base, peak)
=====

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2026.0.0 Build 20260331
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=====

Base Compiler Invocation

C benchmarks:
icx

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Base Compiler Invocation (Continued)

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
```



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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
```

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Peak Optimization Flags (Continued)

502.gcc_r (continued):

-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:

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/Supermicro-Platform-Settings-V1.2-CWF-revC.html>

<http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.html>

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

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-CWF-revC.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2026-official-linux64.xml>

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