



SPEC CPU®2017 Floating Point Rate Result

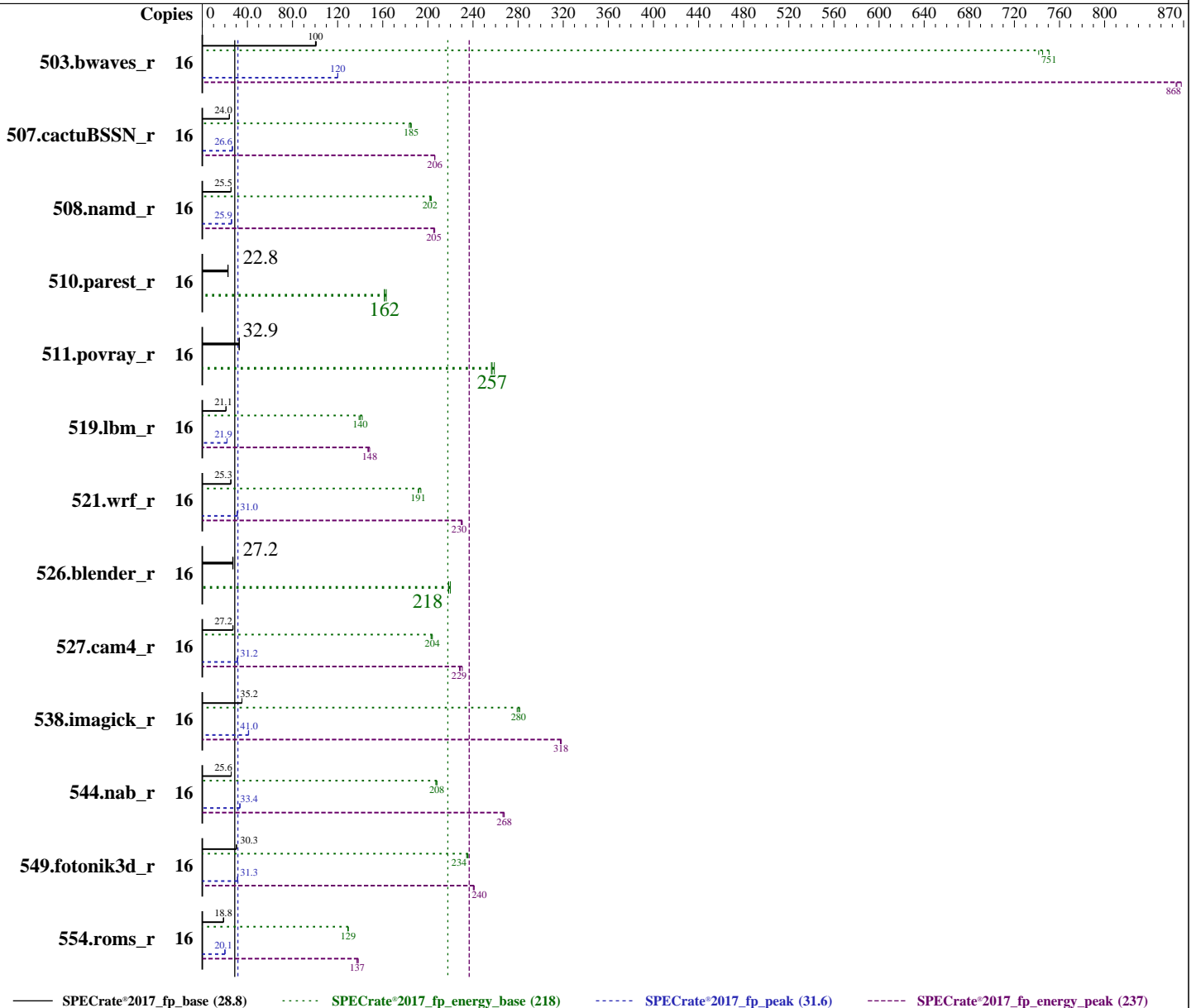
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Lenovo Global Technology
(Test Sponsor: Ampere Computing, Inc.)
ThinkSystem HR330A
(3.00 GHz Ampere eMAG 8180)

SPECrate®2017_fp_base = 28.8
SPECrate®2017_fp_energy_base = 218
SPECrate®2017_fp_peak = 31.6
SPECrate®2017_fp_energy_peak = 237

CPU2017 License: 6412
Test Sponsor: Ampere Computing, Inc.
Tested by: Ampere Computing, Inc.

Test Date: Mar-2026
Hardware Availability: Apr-2019
Software Availability: Aug-2025



Hardware

CPU Name: Ampere eMAG 8180
Max MHz: 3300
Nominal: 3000
Enabled: 32 cores, 1 chip
Orderable: 1 chips

(Continued on next page)

Software

OS: Ubuntu 24.04.1 LTS kernel 6.8.0 (64KB pages)
Compiler: C/C++/Fortran: Version 15.2.0 of GCC
Parallel: No
Firmware: Version 1.12 released Nov-2019
File System: ext4

(Continued on next page)



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Hardware (Continued)

Cache L1: 32 KB I + 32 KB D on chip per core
L2: 4 MB I+D on chip per chip (256 KiB shared / 2 cores)
L3: 32 MB I+D on chip per chip
Other: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2666V-R)
Storage: 1 x 480 GB SATA SSD
Other: CPU Cooling: Air

Software (Continued)

System State: Run level 5 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc v5.3+, commit hash 1972241
Power Management: OS CPU governor set to "performance"

Power

Max. Power (W): 175.86
Idle Power (W): 76.71
Min. Temperature (C): 20.81
Elevation (m): 60
Line Standard: 120 V / 60 Hz / 1 phase / 2 wire
Provisioning: Line powered

Power Settings

Management FW: Version 11.05.111 of Falcon BMC
Memory Mode: Normal

Power-Relevant Hardware

Power Supply: 1 x 550 W (non-redundant)
Details: Lenovo 03LD785 550 Watt High Efficiency Platinum AC Power Supply
Backplane: N/A
Other Storage: N/A
Storage Model #s: 1 x Lenovo 01PE965 (480GB SATA SSD) connected to on-board HBA
NICs Installed: 1 x Lenovo 01PE857 @ 10 GbE (2 ports ethernet)
NICs Enabled (FW/OS): 2 / 1
NICs Connected/Speed: 1 @ 1 Gbps
Other HW Model #s: --

Power Analyzer

Power Analyzer: cpu-reference-ptd:8000
Hardware Vendor: Yokogawa
Model: YokogawaWT310E
Serial Number: T11733385
Input Connection: Serial over USB
Metrology Institute: NIST
Calibration By: Yokogawa USA
Calibration Label: T126622
Calibration Date: 18-Aug-2025
PTDaemon® Version: 1.11.3 (0c074d7d; 2025-10-15)
Setup Description: Directly connected
Current Ranges Used: 5A
Voltage Range Used: 150V

Temperature Meter

Temperature Meter: cpu-reference-ptd:9000
Hardware Vendor: PCSensor
Model: USB9097+DS18B20
Serial Number: --
Input Connection: USB
PTDaemon Version: 1.11.3 (0c074d7d; 2025-10-15)
Setup Description: In front of SUT front panel primary air inlet

Base Results Table

Benchmark	Copies	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
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Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



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Base Results Table (Continued)

Benchmark	Copies	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
503.bwaves_r	16	1598	100	233	751	146	152	1588	101	235	745	148	152	1600	100	236	742	147	153
507.cactuBSSN_r	16	843	24.0	120	185	142	148	843	24.0	120	185	143	149	845	24.0	121	184	144	150
508.namd_r	16	596	25.5	81.6	203	137	144	596	25.5	82.1	202	138	145	596	25.5	81.8	202	137	143
510.parest_r	16	1838	22.8	279	163	152	160	1839	22.8	282	162	153	164	1839	22.8	282	161	153	164
511.povray_r	16	1134	32.9	157	259	138	144	1148	32.5	158	256	138	141	1137	32.9	158	257	139	140
519.lbm_r	16	799	21.1	135	142	169	173	804	21.0	138	139	171	176	800	21.1	137	140	171	176
521.wrf_r	16	1414	25.4	202	194	143	149	1415	25.3	204	192	144	151	1415	25.3	204	191	144	150
526.blender_r	16	896	27.2	120	220	134	159	903	27.0	121	218	134	159	897	27.2	121	218	135	159
527.cam4_r	16	1030	27.2	149	204	145	165	1030	27.2	150	203	146	163	1030	27.2	150	203	146	162
538.imagick_r	16	1132	35.2	154	279	136	152	1132	35.2	154	280	136	154	1132	35.2	153	281	135	154
544.nab_r	16	1051	25.6	141	207	134	143	1051	25.6	140	208	134	145	1051	25.6	140	208	134	143
549.fotonik3d_r	16	2059	30.3	296	234	144	156	2062	30.2	295	236	143	157	2056	30.3	295	235	144	154
554.roms_r	16	1349	18.9	217	129	161	168	1353	18.8	217	129	160	166	1350	18.8	217	129	161	167

SPECrate®2017_fp_base = **28.8**

SPECrate®2017_fp_energy_base = **218**

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

Peak Results Table

Benchmark	Copies	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
503.bwaves_r	16	1335	120	203	863	152	158	1336	120	201	868	151	156	1336	120	202	864	152	157
507.cactuBSSN_r	16	760	26.6	108	206	142	149	759	26.7	108	206	142	149	760	26.6	108	206	142	149
508.namd_r	16	586	25.9	80.7	205	138	141	587	25.9	80.4	206	137	141	587	25.9	80.7	205	138	145
510.parest_r	16	1838	22.8	279	163	152	160	1839	22.8	282	162	153	164	1839	22.8	282	161	153	164
511.povray_r	16	1134	32.9	157	259	138	144	1148	32.5	158	256	138	141	1137	32.9	158	257	139	140
519.lbm_r	16	769	21.9	130	147	170	174	769	21.9	129	148	168	172	769	21.9	130	147	169	174
521.wrf_r	16	1155	31.0	170	230	147	154	1159	30.9	170	230	147	153	1157	31.0	170	230	147	153
526.blender_r	16	896	27.2	120	220	134	159	903	27.0	121	218	134	159	897	27.2	121	218	135	159
527.cam4_r	16	900	31.1	134	228	148	165	898	31.2	133	229	148	167	898	31.2	132	231	147	164
538.imagick_r	16	974	40.9	136	317	139	161	969	41.0	136	318	140	163	969	41.1	135	318	140	161
544.nab_r	16	808	33.3	109	267	135	144	807	33.4	110	267	136	142	807	33.4	109	268	135	144
549.fotonik3d_r	16	1990	31.3	288	241	145	158	1995	31.3	288	241	145	153	1992	31.3	289	240	145	155
554.roms_r	16	1266	20.1	203	138	160	166	1267	20.1	204	137	161	171	1268	20.1	204	137	161	169

SPECrate®2017_fp_peak = **31.6**

SPECrate®2017_fp_energy_peak = **237**

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Submit Notes

The config file option 'submit' was used.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/usr/lib64/:/usr/lib/:/lib64:/home/mjm/jemalloc/lib"



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General Notes

507.cactuBSSN_r (peak): "snprintf" src.alt was used.

507.cactuBSSN_r (base): "snprintf" src.alt was used.

jemalloc is a general purpose malloc(3) implementation that emphasizes fragmentation avoidance and scalable concurrency support. sources available from <https://github.com/facebook/jemalloc/tree/1972241> and built via ". /configure --with-lg-quantum=3" which used system gcc-14 -O3

This benchmark result is intended to provide perspective on past power and/or performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, <http://www.spec.org/osg/policy.html>

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

Platform Notes

Sysinfo program /home/mjm/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on emag Sun Mar 1 08:54:00 2026

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

Table of contents

1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 255 (255.4-lubuntu8.8)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. sysctl
15. /sys/kernel/mm/transparent_hugepage
16. /sys/kernel/mm/transparent_hugepage/khugepaged
17. OS release
18. Disk information
19. /sys/devices/virtual/dmi/id
20. dmidecode

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Platform Notes (Continued)

21. BIOS

1. `uname -a`
Linux emag 6.8.0 #1 SMP PREEMPT_DYNAMIC Fri Feb 28 00:25:30 UTC 2025 aarch64 aarch64 aarch64 GNU/Linux

2. `w`
08:54:00 up 72 days, 9:18, 2 users, load average: 0.89, 0.87, 0.93
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
mjm 10.13.114.186 28Jan26 25:57m 0.00s 0.02s sshd: mjm [priv]

3. Username
From environment variable \$USER: mjm

4. `ulimit -a`
time(seconds) unlimited
file(blocks) unlimited
data(kbytes) unlimited
stack(kbytes) unlimited
coredump(blocks) 0
memory(kbytes) unlimited
locked memory(kbytes) 16691648
process 128681
nofiles 1024
vmemory(kbytes) unlimited
locks unlimited
rtprio 0

5. `sysinfo process ancestry`
/usr/lib/systemd/systemd --system --deserialize=66
SCREEN
-bin/tcsh
runcpu --flagsurl=\$SPEC/gcc.2024-08-14.xml --reportable -c emag-03-gcc15 --tune=base,peak -n 3 -C 16 fprate
runcpu --flagsurl \$SPEC/gcc.2024-08-14.xml --reportable --configfile emag-03-gcc15 --tune base,peak
--iterations 3 --copies 16 --runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv
--logfile \$SPEC/tmp/CPU2017.095/templogs/preenv.fprate.095.0.log --lognum 095.0 --from_runcpu 2
specperl \$SPEC/bin/sysinfo -f
\$SPEC = /home/mjm/cpu2017

6. `/proc/cpuinfo`
CPU implementer : 0x50
CPU architecture: 8
CPU variant : 0x3
CPU part : 0x000
CPU revision : 2
Features : fp asimd evtstrm aes pmull sha1 sha2 crc32 cpuid

7. `lscpu`
From lscpu from util-linux 2.39.3:

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Platform Notes (Continued)

```

Architecture:          aarch64
CPU op-mode(s):       32-bit, 64-bit
Byte Order:           Little Endian
CPU(s):               32
On-line CPU(s) list:  0-31
Vendor ID:            APM
Model name:           -
Model:                2
Thread(s) per core:   1
Core(s) per socket:   32
Socket(s):            1
Stepping:             0x3
Frequency boost:      disabled
CPU(s) scaling MHz:   100%
CPU max MHz:          2911.7639
CPU min MHz:          363.9700
BogoMIPS:             80.00
Flags:                fp asimd evtstrm aes pmull sha1 sha2 crc32 cpuid
L1d cache:            1 MiB (32 instances)
L1i cache:            1 MiB (32 instances)
L2 cache:             4 MiB (16 instances)
NUMA node(s):        1
NUMA node0 CPU(s):   0-31
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:      Not affected
Vulnerability L1tf:               Not affected
Vulnerability Mds:                Not affected
Vulnerability Meltdown:           Mitigation; PTI
Vulnerability Mmio stale data:     Not affected
Vulnerability Retbleed:           Not affected
Vulnerability Spec rstack overflow: Not affected
Vulnerability Spec store bypass:   Vulnerable
Vulnerability Spectre v1:          Mitigation; __user pointer sanitization
Vulnerability Spectre v2:         Vulnerable
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      1M      1M   8 Data          1
L1i   32K      1M      1M   8 Instruction   1
L2    256K     4M      32 Unified        2

```

```

-----
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 1 nodes (0)
node 0 cpus: 0-31
node 0 size: 130403 MB
node 0 free: 85147 MB
node distances:
node 0
0: 10

```

```

-----
9. /proc/meminfo
MemTotal:      133533376 kB

```

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Platform Notes (Continued)

10. who -r
run-level 5 Dec 18 23:35

11. Systemd service manager version: systemd 255 (255.4-lubuntu8.8)
Default Target Status
graphical running

12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled ModemManager apparmor apport blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate power-profiles-daemon rsyslog secureboot-db setvtrgb snapd sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved systemd-timesyncd ua-reboot-cmds ubuntu-advantage udisks2 ufw unattended-upgrades vgauth
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled console-getty debug-shell ipmievd iscsid nftables rsync ssh systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysexit systemd-time-wait-sync
generated openipmi perlbal
indirect serial-getty@ systemd-sysupdate systemd-sysupdate-reboot uidd
masked cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.8.0
root=UUID=16268541-06d0-4374-97ca-2d512d4db26f
ro
cma=1024M
iommu.passthrough=1

14. sysctl
kernel.numa_balancing 0
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

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Platform Notes (Continued)

vm.watermark_scale_factor 10
vm.zone_reclaim_mode 0

15. /sys/kernel/mm/transparent_hugepage
defrag always defer defer+madvice [madvice] never
enabled always [madvice] never
hpage_pmd_size 536870912
shmem_enabled always within_size advise [never] deny force

16. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs 60000
defrag 1
max_ptes_none 8191
max_ptes_shared 4096
max_ptes_swap 1024
pages_to_scan 65536
scan_sleep_millisecs 10000

17. OS release
From /etc/*-release /etc/*-version
os-release Ubuntu 24.04.1 LTS

18. Disk information
SPEC is set to: /home/mjm/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 439G 305G 112G 74% /

19. /sys/devices/virtual/dmi/id
Vendor: Lenovo
Product: HR330A 7X33CT01WW
Product Family: Lenovo ThinkSystem HR330A/HR350A

20. dmidecode
Additional information from dmidecode 3.5 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:
8x Samsung M393A2K43CB2-CTD 16 GB 2 rank 2667

21. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: LENOVO
BIOS Version: HVE104N-1.12
BIOS Date: 11/29/2019
BIOS Revision: 1.12
Firmware Revision: 1.7



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Power Settings Notes

OS CPU governor was set using the command:
echo performance | tee /sys/devices/system/cpu/cpu*/cpufreq/scaling_governor

Compiler Version Notes

```

=====
C          | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)
-----

gcc (GCC) 15.2.0
Copyright (C) 2025 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
-----

=====
C++       | 508.namd_r(base, peak) 510.parest_r(base, peak)
-----

g++ (GCC) 15.2.0
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This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
-----

=====
C++, C   | 511.povray_r(base, peak) 526.blender_r(base, peak)
-----

g++ (GCC) 15.2.0
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gcc (GCC) 15.2.0
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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
-----

=====
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
-----

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=====
Fortran   | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)
-----

```

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SPEC CPU®2017 Floating Point Rate Result

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Lenovo Global Technology
(Test Sponsor: Ampere Computing, Inc.)
ThinkSystem HR330A
(3.00 GHz Ampere eMAG 8180)

SPECrate®2017_fp_base = 28.8
SPECrate®2017_fp_energy_base = 218
SPECrate®2017_fp_peak = 31.6
SPECrate®2017_fp_energy_peak = 237

CPU2017 License: 6412
Test Sponsor: Ampere Computing, Inc.
Tested by: Ampere Computing, Inc.

Test Date: Mar-2026
Hardware Availability: Apr-2019
Software Availability: Aug-2025

Compiler Version Notes (Continued)

GNU Fortran (GCC) 15.2.0
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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Fortran, C | 521.wrf_r(base, peak) 527.cam4_r(base, peak)

GNU Fortran (GCC) 15.2.0
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warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
gcc (GCC) 15.2.0
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Base Compiler Invocation

C benchmarks:
gcc

C++ benchmarks:
g++

Fortran benchmarks:
gfortran

Benchmarks using both Fortran and C:
gfortran gcc

Benchmarks using both C and C++:
g++ gcc

Benchmarks using Fortran, C, and C++:
g++ gcc gfortran

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64

(Continued on next page)



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Base Portability Flags (Continued)

510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_CASE_FLAG -fconvert=big-endian -DSPEC_LP64
526.blender_r: -funsigned-char -DSPEC_LINUX -DSPEC_LP64
527.cam4_r: -DSPEC_CASE_FLAG -DSPEC_LP64
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:

-mabi=lp64 -std=c99 -g -O3 -mcpu=native -flto=16
-fno-strict-aliasing -L/home/mjm/jemalloc/lib -ljemalloc

C++ benchmarks:

-mabi=lp64 -std=c++03 -g -O3 -mcpu=native -flto=16
-L/home/mjm/jemalloc/lib -ljemalloc

Fortran benchmarks:

-mabi=lp64 -g -O3 -mcpu=native -flto=16 -L/home/mjm/jemalloc/lib
-ljemalloc

Benchmarks using both Fortran and C:

-mabi=lp64 -std=c99 -g -O3 -mcpu=native -flto=16
-fno-strict-aliasing -L/home/mjm/jemalloc/lib -ljemalloc

Benchmarks using both C and C++:

-mabi=lp64 -std=c++03 -std=c99 -g -O3 -mcpu=native -flto=16
-fno-strict-aliasing -L/home/mjm/jemalloc/lib -ljemalloc

Benchmarks using Fortran, C, and C++:

-mabi=lp64 -std=c++03 -std=c99 -g -O3 -mcpu=native -flto=16
-fno-strict-aliasing -L/home/mjm/jemalloc/lib -ljemalloc



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Base Other Flags

C benchmarks:

-Wno-error=implicit-int

Fortran benchmarks:

-fallow-argument-mismatch

Benchmarks using both Fortran and C:

-Wno-error=implicit-int -fallow-argument-mismatch

Benchmarks using both C and C++:

-Wno-error=implicit-int

Benchmarks using Fortran, C, and C++:

-Wno-error=implicit-int -fallow-argument-mismatch

Peak Compiler Invocation

C benchmarks:

gcc

C++ benchmarks:

g++

Fortran benchmarks:

gfortran

Benchmarks using both Fortran and C:

gfortran gcc

Benchmarks using both C and C++:

g++ gcc

Benchmarks using Fortran, C, and C++:

g++ gcc gfortran

Peak Portability Flags

Same as Base Portability Flags



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Peak Optimization Flags

C benchmarks:

```
-mabi=lp64 -std=c99 -fprofile-generate -fprofile-use -g -Ofast  
-mcpu=native -flto=16 -L/home/mjm/jemalloc/lib -ljemalloc
```

C++ benchmarks:

```
508.namd_r: -mabi=lp64 -std=c++03 -fprofile-generate -fprofile-use  
-g -Ofast -mcpu=native -flto=16 -L/home/mjm/jemalloc/lib  
-ljemalloc
```

510.parest_r: basepeak = yes

Fortran benchmarks:

```
-mabi=lp64 -fprofile-generate -fprofile-use -g -Ofast -mcpu=native  
-flto=16 -L/home/mjm/jemalloc/lib -ljemalloc
```

Benchmarks using both Fortran and C:

```
521.wrf_r: -mabi=lp64 -std=c99 -fprofile-generate -fprofile-use -g  
-Ofast -mcpu=native -flto=16 -L/home/mjm/jemalloc/lib  
-ljemalloc
```

```
527.cam4_r: -mabi=lp64 -std=c99 -fprofile-generate -fprofile-use -g  
-Ofast -mcpu=native -flto=16 -fno-strict-aliasing  
-L/home/mjm/jemalloc/lib -ljemalloc
```

Benchmarks using both C and C++:

511.povray_r: basepeak = yes

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

```
-mabi=lp64 -std=c++03 -std=c99 -fprofile-generate -fprofile-use -g  
-Ofast -mcpu=native -flto=16 -L/home/mjm/jemalloc/lib -ljemalloc
```

Peak Other Flags

Benchmarks using both Fortran and C:

```
521.wrf_r: -fallow-argument-mismatch
```

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Test Date: Mar-2026
Hardware Availability: Apr-2019
Software Availability: Aug-2025

Peak Other Flags (Continued)

527.cam4_r: -Wno-error=implicit-int -fallow-argument-mismatch

Benchmarks using both C and C++:
-Wno-error=implicit-int

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/gcc.2026-04-28.00.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2017/flags/gcc.2026-04-28.00.xml>

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

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