



# SPEC CPU®2017 Floating Point Rate Result

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## Lenovo Global Technology ThinkSystem SR665 V3 2.40 GHz, AMD EPYC 9654

SPECrate®2017\_fp\_base = 899

SPECrate®2017\_fp\_energy\_base = 1950

SPECrate®2017\_fp\_peak = 907

SPECrate®2017\_fp\_energy\_peak = 1960

CPU2017 License: 9017

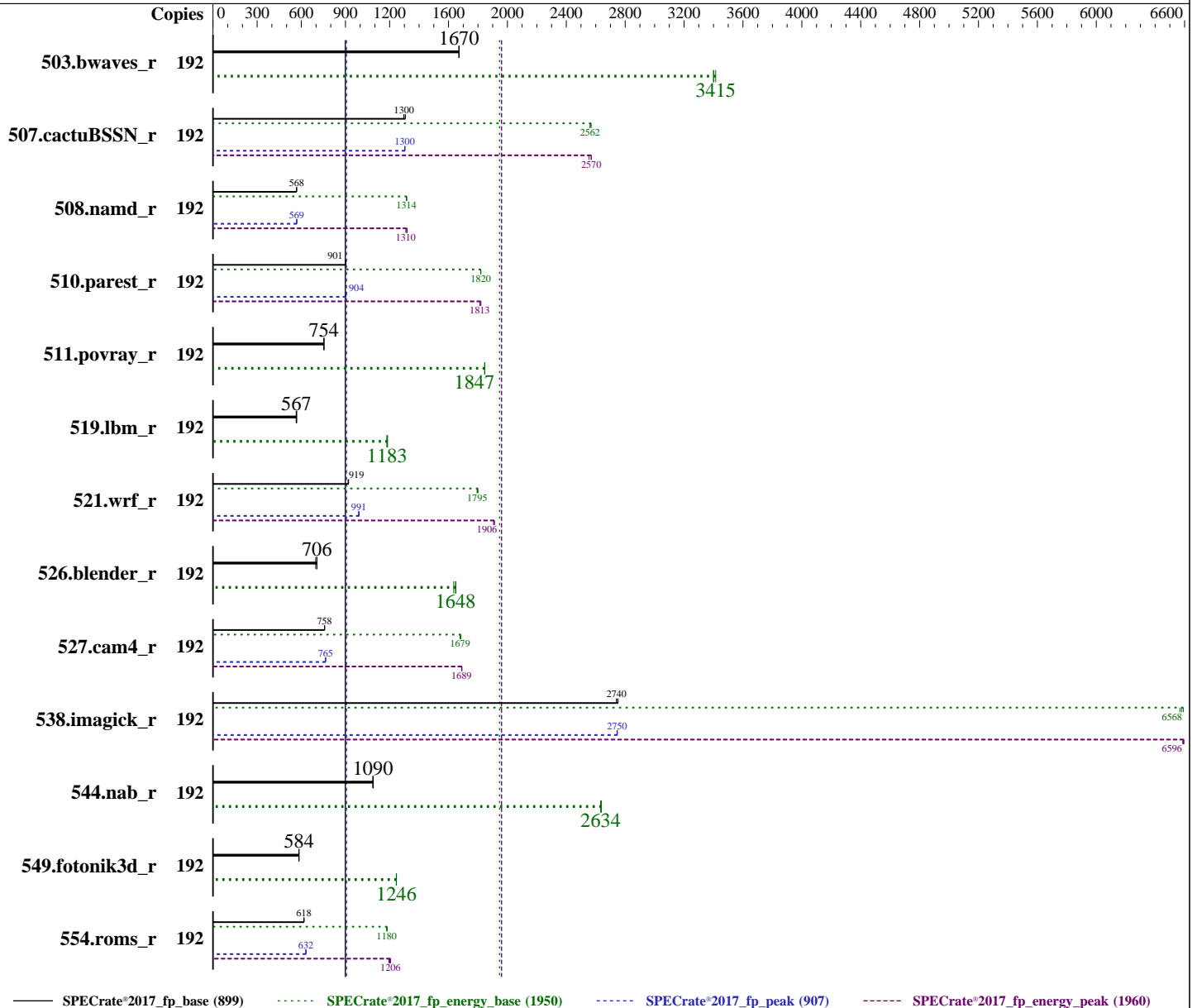
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022



### Hardware

CPU Name: AMD EPYC 9654  
Max MHz: 3700  
Nominal: 2400  
Enabled: 192 cores, 2 chips  
Orderable: 1,2 chips

(Continued on next page)

### Software

OS: Red Hat Enterprise Linux 8.6 (Ootpa)  
Kernel 4.18.0-372.9.1.el8.x86\_64  
Compiler: C/C++/Fortran: Version 4.0.0 of AOCC  
Parallel: No  
Firmware: Lenovo BIOS Version KAE103A 1.10 released Sep-2022

(Continued on next page)



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### ThinkSystem SR665 V3

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### Hardware (Continued)

Cache L1: 32 KB I + 32 KB D on chip per core  
L2: 1 MB I+D on chip per core  
L3: 384 MB I+D on chip per chip,  
32 MB shared / 8 cores  
Other: None  
Memory: 768 GB (24 x 32 GB 2Rx8 PC5-4800B-R)  
Storage: 1 x 480 GB SATA SSD  
Other: None

### Software (Continued)

File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other: None  
Power Management: BIOS and OS set to balance power and performance

### Power

Max. Power (W): 610.3  
Idle Power (W): 125.24  
Min. Temperature (C): 24.63  
Elevation (m): 43  
Line Standard: 220 V / 50 Hz / 1 phase / 3 wires  
Provisioning: Line-powered

### Power Settings

Management FW: Version 1.00 of KAX3031  
Memory Mode: Normal

### Power-Relevant Hardware

Power Supply: 1 x 1800 W (non-redundant)  
Details: ThinkSystem 1800W Platinum Power Supply  
4P57A26294  
Backplane: 8 x 2.5-inch HDD back plane  
Other Storage: None  
Storage Model #: 4XB7A82259  
NICs Installed: 1 x ThinkSystem Ethernet 4-port Adaptor @ 1 Gb  
NICs Enabled (FW/OS): 4 / 1  
NICs Connected/Speed: 1 @ 1 Gb  
Other HW Model #: 6 x Standard fans

### Power Analyzer

Power Analyzer: WIN:9888  
Hardware Vendor: YOKOGAWA, Inc.  
Model: YokogawaWT310E  
Serial Number: C3UG05014E  
Input Connection: Default  
Metrology Institute: CNAS  
Calibration By: GRG METROLOGY & TEST (BEIJING) CO., LTD.  
Calibration Label: J202210116758A-0005  
Calibration Date: 19-Oct-2022  
PTDaemon® Version: 1.9.2 (3976349f; 2020-12-08)  
Setup Description: Connected to PSU1  
Current Ranges Used: 5A  
Voltage Range Used: 300V

### Temperature Meter

Temperature Meter: WIN:9889  
Hardware Vendor: Digi International, Inc.  
Model: DigiWATCHPORT\_H  
Serial Number: W62330940  
Input Connection: USB  
PTDaemon Version: 1.9.2 (3976349f; 2020-12-08)  
Setup Description: 50 mm in front of SUT main intake

## 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	192	<u>1152</u>	<u>1670</u>	<u>615</u>	<u>3410</u>	<u>533</u>	<u>544</u>	1153	1670	617	3400	535	545	1152	1670	617	3400	536	545
507.cactuBSSN_r	192	186	1310	104	2570	559	565	<u>187</u>	<u>1300</u>	<u>104</u>	<u>2560</u>	<u>557</u>	<u>565</u>	188	1300	104	2560	556	566
508.namd_r	192	<u>321</u>	<u>568</u>	<u>151</u>	<u>1310</u>	<u>471</u>	<u>490</u>	322	567	151	1320	470	488	321	568	151	1310	471	490
510.parest_r	192	557	902	300	1820	540	608	557	901	301	1820	539	606	<u>557</u>	<u>901</u>	<u>300</u>	<u>1820</u>	<u>539</u>	<u>607</u>
511.povray_r	192	595	754	264	1850	443	451	595	753	263	1850	443	450	<u>595</u>	<u>754</u>	<u>263</u>	<u>1850</u>	<u>443</u>	<u>450</u>
519.lbm_r	192	358	565	195	1180	543	551	<u>357</u>	<u>567</u>	<u>194</u>	<u>1180</u>	<u>544</u>	<u>549</u>	356	569	194	1190	545	551
521.wrf_r	192	<u>468</u>	<u>919</u>	<u>262</u>	<u>1800</u>	<u>559</u>	<u>569</u>	467	922	261	1800	559	568	468	919	262	1790	559	570
526.blender_r	192	414	707	192	1650	464	511	<u>414</u>	<u>706</u>	<u>192</u>	<u>1650</u>	<u>464</u>	<u>512</u>	419	698	194	1640	462	516
527.cam4_r	192	443	758	218	1680	491	569	442	759	217	1680	491	567	<u>443</u>	<u>758</u>	<u>218</u>	<u>1680</u>	<u>492</u>	<u>571</u>
538.imagick_r	192	174	2750	78.5	6590	452	502	174	2740	78.6	6580	451	501	<u>174</u>	<u>2740</u>	<u>78.7</u>	<u>6570</u>	<u>452</u>	<u>502</u>
544.nab_r	192	<u>297</u>	<u>1090</u>	<u>133</u>	<u>2630</u>	<u>447</u>	<u>478</u>	297	1090	133	2640	447	477	<u>297</u>	<u>1090</u>	<u>133</u>	<u>2640</u>	<u>447</u>	<u>478</u>
549.fotonik3d_r	192	1281	584	669	1250	523	529	<u>1281</u>	<u>584</u>	<u>669</u>	<u>1250</u>	<u>522</u>	<u>529</u>	1282	584	669	1250	522	529
554.roms_r	192	493	618	284	1180	576	587	494	618	285	1180	577	587	<u>494</u>	<u>618</u>	<u>285</u>	<u>1180</u>	<u>577</u>	<u>587</u>

SPECrate®2017\_fp\_base = **899**

SPECrate®2017\_fp\_energy\_base = **1950**

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	192	<u>1152</u>	<u>1670</u>	<u>615</u>	<u>3410</u>	<u>533</u>	<u>544</u>	1153	1670	617	3400	535	545	1152	1670	617	3400	536	545
507.cactuBSSN_r	192	<u>187</u>	<u>1300</u>	<u>104</u>	<u>2570</u>	<u>557</u>	<u>566</u>	187	1300	104	2570	557	566	186	1300	105	2550	562	569
508.namd_r	192	320	569	151	1320	471	489	321	568	151	1320	471	489	<u>321</u>	<u>569</u>	<u>152</u>	<u>1310</u>	<u>473</u>	<u>491</u>
510.parest_r	192	556	904	300	1820	540	607	556	904	301	1810	542	610	<u>556</u>	<u>904</u>	<u>301</u>	<u>1810</u>	<u>542</u>	<u>610</u>
511.povray_r	192	595	754	264	1850	443	451	595	753	263	1850	443	450	<u>595</u>	<u>754</u>	<u>263</u>	<u>1850</u>	<u>443</u>	<u>450</u>
519.lbm_r	192	358	565	195	1180	543	551	<u>357</u>	<u>567</u>	<u>194</u>	<u>1180</u>	<u>544</u>	<u>549</u>	356	569	194	1190	545	551
521.wrf_r	192	433	994	246	1910	568	576	435	989	246	1910	565	574	<u>434</u>	<u>991</u>	<u>246</u>	<u>1910</u>	<u>568</u>	<u>576</u>
526.blender_r	192	414	707	192	1650	464	511	<u>414</u>	<u>706</u>	<u>192</u>	<u>1650</u>	<u>464</u>	<u>512</u>	419	698	194	1640	462	516
527.cam4_r	192	439	765	216	1690	493	564	<u>439</u>	<u>765</u>	<u>217</u>	<u>1690</u>	<u>493</u>	<u>566</u>	440	764	216	1690	492	567
538.imagick_r	192	174	2750	78.5	6590	452	506	174	2740	78.5	6590	451	505	<u>174</u>	<u>2750</u>	<u>78.4</u>	<u>6600</u>	<u>451</u>	<u>505</u>
544.nab_r	192	<u>297</u>	<u>1090</u>	<u>133</u>	<u>2630</u>	<u>447</u>	<u>478</u>	297	1090	133	2640	447	477	<u>297</u>	<u>1090</u>	<u>133</u>	<u>2640</u>	<u>447</u>	<u>478</u>
549.fotonik3d_r	192	1281	584	669	1250	523	529	<u>1281</u>	<u>584</u>	<u>669</u>	<u>1250</u>	<u>522</u>	<u>529</u>	1282	584	669	1250	522	529
554.roms_r	192	483	632	280	1200	580	588	483	631	282	1190	583	590	<u>483</u>	<u>632</u>	<u>279</u>	<u>1210</u>	<u>578</u>	<u>585</u>

SPECrate®2017\_fp\_peak = **907**

SPECrate®2017\_fp\_energy\_peak = **1960**

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## Compiler Notes

The AMD64 AOCC Compiler Suite is available at <http://developer.amd.com/amd-aocc/>

## Submit Notes

The config file option 'submit' was used.  
'numactl' was used to bind copies to the cores.  
See the configuration file for details.



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## Operating System Notes

'ulimit -s unlimited' was used to set environment stack size limit  
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty\_ratio=8' run as root.  
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.  
To free node-local memory and avoid remote memory usage,  
'sysctl -w vm.zone\_reclaim\_mode=1' run as root.  
To clear filesystem caches, 'sync; sysctl -w vm.drop\_caches=3' run as root.  
To disable address space layout randomization (ASLR) to reduce run-to-run  
variability, 'sysctl -w kernel.randomize\_va\_space=0' run as root.

To enable Transparent Hugepages (THP) for all allocations,  
'echo always > /sys/kernel/mm/transparent\_hugepage/enabled' and  
'echo always > /sys/kernel/mm/transparent\_hugepage/defrag' run as root.

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
LD_LIBRARY_PATH =  
    "/home/cpu2017-1.1.8-amd-aocc400-genoa-Blb/amd_rate_aocc400_genoa_B_lib/  
    lib:/home/cpu2017-1.1.8-amd-aocc400-genoa-Blb/amd_rate_aocc400_genoa_B_l  
    ib/lib32:"
```

```
MALLOC_CONF = "retain:true"
```

## General Notes

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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.



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## Platform Notes

BIOS configuration:  
Operating Mode set to Custom Mode  
Core Performance Boost set to Disabled  
SOC P-states set to P3  
NUMA Nodes per Socket set to NPS4  
ACPI SRAT L3 Cache as NUMA Domain set to Enabled  
L2 Stream HW Prefetcher set to Disabled  
SMT Mode set to Disabled

Sysinfo program /home/cpu2017-1.1.8-amd-aocc400-genoa-Blb/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d  
running on localhost.localdomain Sat Oct 22 06:23:35 2022

SUT (System Under Test) info as seen by some common utilities.  
For more information on this section, see  
<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo  
model name : AMD EPYC 9654 96-Core Processor  
2 "physical id"s (chips)  
192 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)  
cpu cores : 96  
siblings : 96  
physical 0: cores 0 1 2 3 4 5 6 7 16 17 18 19 20 21 22 23 36 37 38 39 52 53 54 55  
64 65 66 67 68 69 70 71 80 81 82 83 84 85 86 87 96 97 98 99 100 101 102 103 112 113  
114 115 116 117 118 119 128 129 130 131 132 133 134 135 144 145 146 147 148 149 150  
151 160 161 162 163 164 165 166 167 176 177 178 179 180 181 182 183  
physical 1: cores 0 1 2 3 4 5 6 7 16 17 18 19 20 21 22 23 36 37 38 39 52 53 54 55  
64 65 66 67 68 69 70 71 80 81 82 83 84 85 86 87 96 97 98 99 100 101 102 103 112 113  
114 115 116 117 118 119 128 129 130 131 132 133 134 135 144 145 146 147 148 149 150  
151 160 161 162 163 164 165 166 167 176 177 178 179 180 181 182 183

From lscpu from util-linux 2.32.1:  
Architecture: x86\_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 192  
On-line CPU(s) list: 0-191  
Thread(s) per core: 1  
Core(s) per socket: 96  
Socket(s): 2  
NUMA node(s): 24  
Vendor ID: AuthenticAMD

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## Platform Notes (Continued)

```

BIOS Vendor ID:      Advanced Micro Devices, Inc.
CPU family:          25
Model:               17
Model name:          AMD EPYC 9654 96-Core Processor
BIOS Model name:     AMD EPYC 9654 96-Core Processor
Stepping:            1
CPU MHz:             1500.000
CPU max MHz:         3707.8120
CPU min MHz:         1500.0000
BogoMIPS:            4792.71
Virtualization:      AMD-V
L1d cache:           32K
L1i cache:           32K
L2 cache:            1024K
L3 cache:            32768K
NUMA node0 CPU(s):  0-7
NUMA node1 CPU(s):  24-31
NUMA node2 CPU(s):  48-55
NUMA node3 CPU(s):  72-79
NUMA node4 CPU(s):  8-15
NUMA node5 CPU(s):  32-39
NUMA node6 CPU(s):  56-63
NUMA node7 CPU(s):  80-87
NUMA node8 CPU(s):  16-23
NUMA node9 CPU(s):  40-47
NUMA node10 CPU(s): 64-71
NUMA node11 CPU(s): 88-95
NUMA node12 CPU(s): 96-103
NUMA node13 CPU(s): 120-127
NUMA node14 CPU(s): 144-151
NUMA node15 CPU(s): 168-175
NUMA node16 CPU(s): 104-111
NUMA node17 CPU(s): 128-135
NUMA node18 CPU(s): 152-159
NUMA node19 CPU(s): 176-183
NUMA node20 CPU(s): 112-119
NUMA node21 CPU(s): 136-143
NUMA node22 CPU(s): 160-167
NUMA node23 CPU(s): 184-191
Flags:               fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm
constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf pni pclmulqdq
monitor ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c
rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx

```

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## Platform Notes (Continued)

```
cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase
bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1
xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local avx512_bf16 clzero irperf
xsaveerptr wbnoinvd amd_ppin arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean
flushbyasid decodeassists pausefilter pfthreshold avic v_vmsave_vmload vgif
v_spec_ctrl avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni
avx512_bitalg avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_lld
```

```
/proc/cpuinfo cache data
cache size : 1024 KB
```

From numactl --hardware

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

```
available: 24 nodes (0-23)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 31875 MB
node 0 free: 31685 MB
node 1 cpus: 24 25 26 27 28 29 30 31
node 1 size: 32251 MB
node 1 free: 32086 MB
node 2 cpus: 48 49 50 51 52 53 54 55
node 2 size: 32251 MB
node 2 free: 32072 MB
node 3 cpus: 72 73 74 75 76 77 78 79
node 3 size: 32251 MB
node 3 free: 32113 MB
node 4 cpus: 8 9 10 11 12 13 14 15
node 4 size: 32251 MB
node 4 free: 32110 MB
node 5 cpus: 32 33 34 35 36 37 38 39
node 5 size: 32251 MB
node 5 free: 31998 MB
node 6 cpus: 56 57 58 59 60 61 62 63
node 6 size: 32251 MB
node 6 free: 32120 MB
node 7 cpus: 80 81 82 83 84 85 86 87
node 7 size: 32251 MB
node 7 free: 32119 MB
node 8 cpus: 16 17 18 19 20 21 22 23
node 8 size: 32251 MB
node 8 free: 32113 MB
node 9 cpus: 40 41 42 43 44 45 46 47
node 9 size: 32251 MB
node 9 free: 31981 MB
```

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## Platform Notes (Continued)

```

node 10 cpus: 64 65 66 67 68 69 70 71
node 10 size: 32251 MB
node 10 free: 32122 MB
node 11 cpus: 88 89 90 91 92 93 94 95
node 11 size: 32251 MB
node 11 free: 32124 MB
node 12 cpus: 96 97 98 99 100 101 102 103
node 12 size: 32251 MB
node 12 free: 32124 MB
node 13 cpus: 120 121 122 123 124 125 126 127
node 13 size: 32209 MB
node 13 free: 32071 MB
node 14 cpus: 144 145 146 147 148 149 150 151
node 14 size: 32251 MB
node 14 free: 32110 MB
node 15 cpus: 168 169 170 171 172 173 174 175
node 15 size: 32251 MB
node 15 free: 32122 MB
node 16 cpus: 104 105 106 107 108 109 110 111
node 16 size: 32251 MB
node 16 free: 32121 MB
node 17 cpus: 128 129 130 131 132 133 134 135
node 17 size: 32251 MB
node 17 free: 32124 MB
node 18 cpus: 152 153 154 155 156 157 158 159
node 18 size: 32251 MB
node 18 free: 32120 MB
node 19 cpus: 176 177 178 179 180 181 182 183
node 19 size: 32251 MB
node 19 free: 32113 MB
node 20 cpus: 112 113 114 115 116 117 118 119
node 20 size: 32251 MB
node 20 free: 32122 MB
node 21 cpus: 136 137 138 139 140 141 142 143
node 21 size: 32183 MB
node 21 free: 32056 MB
node 22 cpus: 160 161 162 163 164 165 166 167
node 22 size: 32251 MB
node 22 free: 32117 MB
node 23 cpus: 184 185 186 187 188 189 190 191
node 23 size: 32251 MB
node 23 free: 32118 MB
node distances:
node 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23

```

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899

SPECrate®2017\_fp\_energy\_base = 1950

SPECrate®2017\_fp\_peak = 907

SPECrate®2017\_fp\_energy\_peak = 1960

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Oct-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

## Platform Notes (Continued)

0:	10	12	12	12	11	12	12	12	11	12	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
1:	12	10	12	12	12	11	12	12	12	11	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
2:	12	12	10	12	12	12	11	12	12	12	11	12	32	32	32	32	32	32	32	32
32	32	32	32																	
3:	12	12	12	10	12	12	12	11	12	12	12	11	32	32	32	32	32	32	32	32
32	32	32	32																	
4:	11	12	12	12	10	12	12	12	11	12	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
5:	12	11	12	12	12	10	12	12	12	11	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
6:	12	12	11	12	12	12	10	12	12	12	11	12	32	32	32	32	32	32	32	32
32	32	32	32																	
7:	12	12	12	11	12	12	12	10	12	12	12	11	32	32	32	32	32	32	32	32
32	32	32	32																	
8:	11	12	12	12	11	12	12	12	10	12	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
9:	12	11	12	12	12	11	12	12	12	10	12	12	32	32	32	32	32	32	32	32
32	32	32	32																	
10:	12	12	11	12	12	12	11	12	12	12	10	12	32	32	32	32	32	32	32	32
32	32	32	32																	
11:	12	12	12	11	12	12	12	11	12	12	12	10	32	32	32	32	32	32	32	32
32	32	32	32																	
12:	32	32	32	32	32	32	32	32	32	32	32	32	32	10	12	12	12	11	12	12
11	12	12	12																	
13:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	10	12	12	12	11	12
12	11	12	12																	
14:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12	10	12	12	12	11
12	12	11	12																	
15:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12	12	10	12	12	11
12	12	12	11																	
16:	32	32	32	32	32	32	32	32	32	32	32	32	32	11	12	12	12	10	12	12
11	12	12	12																	
17:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	11	12	12	12	10	12
12	11	12	12																	
18:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12	11	12	12	12	10
12	12	11	12																	
19:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12	12	11	12	12	10
12	12	12	11																	
20:	32	32	32	32	32	32	32	32	32	32	32	32	32	11	12	12	12	11	12	12
10	12	12	12																	
21:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	11	12	12	12	11	12
12	10	12	12																	
22:	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12	11	12	12	12	11

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
SPECrate®2017\_fp\_energy\_base = 1950  
SPECrate®2017\_fp\_peak = 907  
SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022  
**Hardware Availability:** Dec-2022  
**Software Availability:** Nov-2022

## Platform Notes (Continued)

```
12 12 10 12
23: 32 32 32 32 32 32 32 32 32 32 32 32 12 12 12 11 12 12 12 11
12 12 12 10
```

```
From /proc/meminfo
MemTotal:      792108516 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/sbin/tuned-adm active
Current active profile: throughput-performance
```

```
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
powersave
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.6 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.6"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.6 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.6 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.6 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8::baseos
```

```
uname -a:
Linux localhost.localdomain 4.18.0-372.9.1.el8.x86_64 #1 SMP Fri Apr 15 22:12:19 EDT
2022 x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

```
CVE-2018-12207 (iTLB Multihit):      Not affected
CVE-2018-3620 (L1 Terminal Fault):   Not affected
Microarchitectural Data Sampling:   Not affected
CVE-2017-5754 (Meltdown):           Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store
Bypass disabled via prctl and
seccomp
CVE-2017-5753 (Spectre variant 1):  Mitigation: usercopy/swapgs
barriers and __user pointer
sanitization
```

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**Test Date:** Oct-2022  
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## Platform Notes (Continued)

CVE-2017-5715 (Spectre variant 2): Mitigation: Retpolines, IBPB: conditional, IBRS\_FW, STIBP: disabled, RSB filling  
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected  
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Oct 22 06:22

SPEC is set to: /home/cpu2017-1.1.8-amd-aocc400-genoa-B1b

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda4	xfs	373G	21G	352G	6%	/home

From /sys/devices/virtual/dmi/id

Vendor: Lenovo  
Product: ThinkSystem SR665 V3 MB,Genoa,Kauai,DDR5,Kauai,2U  
Product Family: ThinkSystem  
Serial: 1234567890

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:  
24x SK Hynix HMC88AEBRA168N 32 GB 2 rank 4800

BIOS:  
BIOS Vendor: Lenovo  
BIOS Version: KAE103A-1.10  
BIOS Date: 09/26/2022  
BIOS Revision: 1.10  
Firmware Revision: 1.0

(End of data from sysinfo program)

## Compiler Version Notes

=====  
C | 519.lbm\_r(base, peak) 538.imagick\_r(base, peak)  
| 544.nab\_r(base, peak)  
=====

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017_fp_base =	899
SPECrate®2017_fp_energy_base =	1950
SPECrate®2017_fp_peak =	907
SPECrate®2017_fp_energy_peak =	1960

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022  
**Hardware Availability:** Dec-2022  
**Software Availability:** Nov-2022

## Compiler Version Notes (Continued)

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

=====  
C++ | 508.namd\_r(base, peak) 510.parest\_r(base, peak)  
=====

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

=====  
C++, C | 511.povray\_r(base, peak) 526.blender\_r(base, peak)  
=====

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin  
AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

=====  
C++, C, Fortran | 507.cactuBSSN\_r(base, peak)  
=====

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin  
AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin  
AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
SPECrate®2017\_fp\_energy\_base = 1950  
SPECrate®2017\_fp\_peak = 907  
SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022  
**Hardware Availability:** Dec-2022  
**Software Availability:** Nov-2022

## Compiler Version Notes (Continued)

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

-----  
Fortran | 503.bwaves\_r(base, peak) 549.fotonik3d\_r(base, peak)  
554.roms\_r(base, peak)

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

-----  
Fortran, C | 521.wrf\_r(base, peak) 527.cam4\_r(base, peak)  
-----

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin  
AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

## Base Compiler Invocation

C benchmarks:  
clang

C++ benchmarks:  
clang++

Fortran benchmarks:  
flang

Benchmarks using both Fortran and C:  
flang clang

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
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SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022  
**Hardware Availability:** Dec-2022  
**Software Availability:** Nov-2022

## Base Compiler Invocation (Continued)

Benchmarks using both C and C++:

```
clang++ clang
```

Benchmarks using Fortran, C, and C++:

```
clang++ clang flang
```

## Base Portability Flags

```
503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
526.blender_r: -funsigned-char -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:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather -O3
-march=znver4 -fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-zopt -lamdlibm -lamdalloc -lflang
```

C++ benchmarks:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -mllvm -unroll-threshold=100
-finline-aggressive -mllvm -loop-unswitch-threshold=200000
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
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SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022

**Hardware Availability:** Dec-2022

**Software Availability:** Nov-2022

## Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc  
-lflang
```

Fortran benchmarks:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver4  
-fveclib=AMDLIBM -ffast-math -Kieee -Mrecursive -funroll-loops  
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3  
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc  
-lflang
```

Benchmarks using both Fortran and C:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver4  
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3  
-zopt -Kieee -Mrecursive -funroll-loops -mllvm -lsr-in-nested-loop  
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc -lflang
```

Benchmarks using both C and C++:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver4  
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3  
-zopt -mllvm -unroll-threshold=100 -finline-aggressive  
-mllvm -loop-unswitch-threshold=200000 -lamdlibm -lamdalloc -lflang
```

Benchmarks using Fortran, C, and C++:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver4  
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3  
-zopt -mllvm -unroll-threshold=100 -finline-aggressive  
-mllvm -loop-unswitch-threshold=200000 -Kieee -Mrecursive  
-funroll-loops -mllvm -lsr-in-nested-loop  
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc -lflang
```





# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
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SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022

**Hardware Availability:** Dec-2022

**Software Availability:** Nov-2022

## Base Other Flags

C benchmarks:

-Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

-Wno-unused-command-line-argument

Benchmarks using both C and C++:

-Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:

-Wno-unused-command-line-argument

## Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using both C and C++:

clang++ clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
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SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022  
**Hardware Availability:** Dec-2022  
**Software Availability:** Nov-2022

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: basepeak = yes

```
538.imagick_r: -m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math
-fstruct-layout=7 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc
```

544.nab\_r: basepeak = yes

C++ benchmarks:

```
508.namd_r: -m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math
-finline-aggressive -mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc
```

```
510.parest_r: -m64 -flto -Wl,-mllvm -Wl,-suppress-fmas
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math
-finline-aggressive -mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc
```

Fortran benchmarks:

503.bwaves\_r: basepeak = yes

549.fotonik3d\_r: basepeak = yes

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
SPECrate®2017\_fp\_energy\_base = 1950  
SPECrate®2017\_fp\_peak = 907  
SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022

**Hardware Availability:** Dec-2022

**Software Availability:** Nov-2022

## Peak Optimization Flags (Continued)

```
554.roms_r: -m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math -Mrecursive
-mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm
-lamdalloc -lflang
```

Benchmarks using both Fortran and C:

```
521.wrf_r: -m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast
-march=znver4 -fveclib=AMDLIBM -ffast-math
-fstruct-layout=7 -mllvm -unroll-threshold=50
-freemap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -Mrecursive
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc
-lflang
```

```
527.cam4_r: -m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -mllvm -reduce-array-computations=3 -zopt
-Kieee -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc
-lflang
```

Benchmarks using both C and C++:

511.povray\_r: basepeak = yes

526.blender\_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Ofast -march=znver4
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mllvm -unroll-threshold=50 -freemap-arrays -fstrip-mining
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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**Lenovo Global Technology**  
**ThinkSystem SR665 V3**  
**2.40 GHz, AMD EPYC 9654**

SPECrate®2017\_fp\_base = 899  
SPECrate®2017\_fp\_energy\_base = 1950  
SPECrate®2017\_fp\_peak = 907  
SPECrate®2017\_fp\_energy\_peak = 1960

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Oct-2022

**Hardware Availability:** Dec-2022

**Software Availability:** Nov-2022

## Peak Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

```
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3 -zopt
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-finline-aggressive -faggressive-loop-transform -fvector-transform
-fscalar-transform -Mrecursive -fepilog-vectorization-of-inductions
-lamdlibm -lamdalloc -lflang
```

## Peak Other Flags

C benchmarks:

```
-Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

Fortran benchmarks:

```
-Wno-unused-command-line-argument
```

Benchmarks using both Fortran and C:

```
-Wno-unused-command-line-argument
```

Benchmarks using both C and C++:

```
-Wno-unused-command-line-argument
```

Benchmarks using Fortran, C, and C++:

```
-Wno-unused-command-line-argument
```

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/aocc400-flags.html>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Genoa-N.html>

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

<http://www.spec.org/cpu2017/flags/aocc400-flags.xml>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Genoa-N.xml>

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