## Lenovo Global Technology

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

**Hardware**

- **CPU Name:** Intel Xeon E-2224G  
- **Max MHz:** 4700  
- **Nominal:** 3500  
- **Enabled:** 4 cores, 1 chip  
- **Orderable:** 1 chip  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **Cache L2:** 256 KB I+D on chip per core  
- **Cache L3:** 8 MB I+D on chip per chip  
- **Memory:** 128 GB (4 x 32 GB 2Rx4 PC4-2666V-E)  
- **Storage:** 1 x 960 GB SATA SSD  
- **Other:** None

**Software**

- **OS:** SUSE Linux Enterprise Server 12 SP5 (x86_64)  
- **Kernel:** 4.12.14-120-default  
- **Compiler:** C/C++: Version 19.1.1.217 of Intel  
- **Parallel:** No  
- **Firmware:** Lenovo BIOS Version ISE115D 2.10 released Apr-2020  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 64-bit  
- **Other:** jemalloc memory allocator V5.0.1  
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage

---

**Lenovo Global Technology**  
ThinkSystem ST250  
(3.50 GHz, Intel Xeon E-2224G)  

**SPECrate®2017_fp_base = 33.3**  
**SPECrate®2017_fp_peak = 33.7**

| Test Date: | Jun-2020  
| Hardware Availability: | Mar-2020  
| Software Availability: | Apr-2020

### SPEC CPU 2017 Floating Point Rate Result

<table>
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<tr>
<th>Benchmark</th>
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<th>SPECrate®2017_fp_peak</th>
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**SPECrate®2017_fp_base (33.3)**  
**SPECrate®2017_fp_peak (33.7)**
## Lenovo Global Technology

**ThinkSystem ST250 (3.50 GHz, Intel Xeon E-2224G)**

**CPU2017 License:** 9017  
**Test Date:** Jun-2020  
**Test Sponsor:** Lenovo Global Technology  
**Hardware Availability:** Mar-2020  
**Tested by:** Lenovo Global Technology  
**Software Availability:** Apr-2020

---

### Results Table

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</table>

### Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler. The correct version of C/C++ compiler is: Versio 19.1.1.217 Build 20200306 Compiler for Linux  
The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux

### Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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/cpu2017-1.1.0-ic19.1.1/lib/intel64:/home/cpu2017-1.1.0-ic19.1.1/j`  
`e5.0.1-64"`  
`MALLOC_CONF = "retain:true"`
General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
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
Yes: 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.
Yes: The test sponsor attests, as of date of publication, that CVE-2018-3640 (Spectre variant 3a) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2018-3639 (Spectre variant 4) is mitigated in the system as tested and documented.

Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance

Sysinfo program /home/cpu2017-1.1.0-ic19.1.1/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed1e6e46a485a0011
running on linux-tzna Tue Jun  2 01:42:04 2020

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 : Intel(R) Xeon(R) E-2224G CPU @ 3.50GHz
  1 "physical id"s (chips)
  4 "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 : 4
siblings : 4
physical 0: cores 0 1 2 3

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit

(Continued on next page)
Lenovo Global Technology

ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

SPECrate®2017_fp_base = 33.3

SPECrate®2017_fp_peak = 33.7

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Test Date: Jun-2020
Tested by: Lenovo Global Technology
Hardware Availability: Mar-2020
Software Availability: Apr-2020

Platform Notes (Continued)

Byte Order: Little Endian
Address sizes: 39 bits physical, 48 bits virtual
CPU(s): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Xeon(R) E-2224G CPU @ 3.50GHz
Stepping: 10
CPU MHz: 3500.000
CPU max MHz: 4700.0000
CPU min MHz: 800.0000
BogoMIPS: 7008.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 8192K
NUMA node 0 CPU(s): 0-3
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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmpref tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3
sbg fma cx16 xtrr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer
aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single
pti ssbd ibrs ibpb stibp tpr_shadow vmm vsp save orn vpid fsgsbase tsc_adjust
bmi1 hle avx2 smep bmi2 3dnow ret rdseed adx smap clflushopt intel_pt
xsaves opt xsavec xgetbv1 xsaveopt xsaves dtherm ida arat pln pts hwp hwp_notify hwp_act_window
hwp_epp md_clear flush_l1d

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 1 nodes (0)
node 0 cpus: 0 1 2 3
node 0 size: 128867 MB
node 0 free: 128350 MB
node distances:
node 0
0: 10

(Continued on next page)
Lenovo Global Technology
ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

SPECrate®2017_fp_base = 33.3
SPECrate®2017_fp_peak = 33.7

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

Platform Notes (Continued)

From /proc/meminfo
MemTotal:       131960060 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 5
  # This file is deprecated and will be removed in a future service pack or release.
  # Please check /etc/os-release for details about this release.
  os-release:
    NAME="SLES"
    VERSION="12-SP5"
    VERSION_ID="12.5"
    PRETTY_NAME="SUSE Linux Enterprise Server 12 SP5"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12:sp5"

uname -a:
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

itlb_multihit:  KVM: Mitigation: Split huge pages
CVE-2018-3620 (L1 Terminal Fault): Mitigation: PTE Inversion; VMX: conditional
  cache flushes, SMT disabled
Microarchitectural Data Sampling:
CVE-2017-5754 (Meltdown): Mitigation: PTI
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
CVE-2017-5715 (Spectre variant 2):
  Mitigation: Full generic retpoline, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB
  filling
tsx_async_abort:
  Mitigation: Clear CPU buffers; SMT disabled

run-level 3 Jun 2 01:40

SPEC is set to: /home/cpu2017-1.1.0-ic19.1.1

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sdb3      xfs  893G  64G  829G   8% /
**SPEC CPU®2017 Floating Point Rate Result**

**Lenovo Global Technology**  
ThinkSystem ST250  
(3.50 GHz, Intel Xeon E-2224G)

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
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<th>Test Date:</th>
<th>Jun-2020</th>
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<td>Lenovo Global Technology</td>
<td>Hardware Availability:</td>
<td>Mar-2020</td>
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<td>Tested by:</td>
<td>Lenovo Global Technology</td>
<td>Software Availability:</td>
<td>Apr-2020</td>
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</table>

**SPECraté®2017_fp_base = 33.3**  
**SPECraté®2017_fp_peak = 33.7**

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**Platform Notes (Continued)**

From `/sys/devices/virtual/dmi/id`
- **BIOS:** Lenovo -[ISE115D-2.10]- 04/24/2020  
- **Vendor:** Lenovo  
- **Product:** ThinkSystem ST250 -[7Y45CT00WW]-  
- **Product Family:** ThinkSystem  
- **Serial:** 1234567890

Additional information from `dmidecode` 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:**
  - 4x SK Hynix HMAA4GU7AJR8N-VK 32767 MB 2 rank 2666

---

**Compiler Version Notes**

```
+C               | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)
+--------------------------
| Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
| NextGen Build 202000304  
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
+--------------------------
+C++              | 508.namd_r(base, peak) 510.parest_r(base, peak)
+--------------------------
| Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
| NextGen Build 202000304  
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
+--------------------------
+C++, C           | 511.povray_r(base) 526.blender_r(base, peak)
+--------------------------
| Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
| NextGen Build 202000304  
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
| Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
| NextGen Build 202000304  
| Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
```

(Continued on next page)
Lenovo Global Technology
ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

SPECrate®2017_fp_base = 33.3
SPECrate®2017_fp_peak = 33.7

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

Test Date: Jun-2020
Hardware Availability: Mar-2020
Software Availability: Apr-2020

Compiler Version Notes (Continued)

C++, C | 511.povray_r(peak)
______________________________________________________________
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C | 511.povray_r(base) 526.blender_r(base, peak)
________________________________________________________________________
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C | 511.povray_r(peak)
________________________________________________________________________
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C, Fortran | 507.cactuBSSN_r(base, peak)
________________________________________________________________________
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

**Lenovo Global Technology**

ThinkSystem ST250  
(3.50 GHz, Intel Xeon E-2224G)

| SPECrate®2017_fp_base = 33.3 | SPECrate®2017_fp_peak = 33.7 |

**CPU2017 License:** 9017  
**Test Date:** Jun-2020

| Test Sponsor: Lenovo Global Technology | Hardware Availability: Mar-2020 |
| Tested by: Lenovo Global Technology | Software Availability: Apr-2020 |

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**Compiler Version Notes (Continued)**

| Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak) |
| Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.127 Build 20200304 |
| Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1 NextGen Build 20200304 |

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| Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak) |
| Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.127 Build 20200304 |
| Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1 NextGen Build 20200304 |

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(Continued on next page)
Lenovo Global Technology
ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

SPECratenode2017_fp_base = 33.3
SPECratenode2017_fp_peak = 33.7

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

Test Date: Jun-2020
Hardware Availability: Mar-2020
Software Availability: Apr-2020

Compiler Version Notes (Continued)
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel (R) C Intel (R) 64 Compiler for applications running on Intel (R) 64,
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

Benchmarks using both C and C++:
icpc icc

Benchmarks using Fortran, C, and C++:
icpc icc ifort

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_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64
Lenovo Global Technology
ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

**SPEC CPU®2017 Floating Point Rate Result**

- **SPECrate®2017_fp_base = 33.3**
- **SPECrate®2017_fp_peak = 33.7**

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**Base Optimization Flags**

**C benchmarks:**
- `-m64 -qnextgen -std=c11`
- `-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
- `-fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse`
- `-funroll-loops -qopt-mem-layout-trans=4`
- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**C++ benchmarks:**
- `-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries`
- `-Wl,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto`
- `-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4`
- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**Fortran benchmarks:**
- `-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
- `-fuse-ld=gold -xCORE-AVX2 -O3 -ipo -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles`
- `-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte`
- `-auto -mbranches-within-32B-boundaries`
- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**Benchmarks using both Fortran and C:**
- `-m64 -qnextgen -std=c11`
- `-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
- `-fuse-ld=gold -xCORE-AVX2 -O3 -ipo -no-prec-div -qopt-prefetch`
- `-ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles`
- `-nostandard-realloc-lhs -align array32byte -auto -mbranches-within-32B-boundaries`
- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**Benchmarks using both C and C++:**
- `-m64 -qnextgen -std=c11`
- `-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
- `-fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse`
- `-funroll-loops -qopt-mem-layout-trans=4`
- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**Benchmarks using Fortran, C, and C++:**
- `-m64 -qnextgen -std=c11`
- `-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs`
- `-fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse`
- `-funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div`
- `-qopt-prefetch -ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles`
- `-nostandard-realloc-lhs -align array32byte -auto -mbranches-within-32B-boundaries`

(Continued on next page)
## Lenovo Global Technology

**ThinkSystem ST250**  
*(3.50 GHz, Intel Xeon E-2224G)*

### SPEC CPU 2017 Floating Point Rate Result

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### Base Optimization Flags (Continued)

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

- `-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

---

### Peak Compiler Invocation

**C** benchmarks:

- `icc`

**C++** benchmarks:

- `icpc`

**Fortran** benchmarks:

- `ifort`

Benchmarks using both Fortran and C:

- `ifort icc`

Benchmarks using both C and C++:

- `icpc icc`

Benchmarks using Fortran, C, and C++:

- `icpc icc ifort`

---

### Peak Portability Flags

*Same as Base Portability Flags*

---

### Peak Optimization Flags

**C** benchmarks:

- `519.lbm_r: basepeak = yes`
- `538.imagick_r: basepeak = yes`
- `544.nab_r: basepeak = yes`

**C++** benchmarks:

*(Continued on next page)*
Peak Optimization Flags (Continued)

508.namd_r: basepeak = yes

510.parest_r: -m64 -qnextgen
-W1,-plugin-opt=-x86-branches-within-32B-boundaries
-W1,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

Fortran benchmarks:

503.bwaves_r: -m64 -W1,-plugin-opt=-x86-branches-within-32B-boundaries
-W1,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

549.fotonik3d_r: basepeak = yes

554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:

521.wrf_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

(Continued on next page)
# Lenovo Global Technology

## ThinkSystem ST250
(3.50 GHz, Intel Xeon E-2224G)

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## Peak Optimization Flags (Continued)

507.cactuBSSN_r: basepeak = yes

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


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

- [http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-J.xml](http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-J.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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