Supermicro
SuperServer SYS-211E-FRDN2T
(X13SEM-TF, Intel Xeon Platinum 8490H)

CPU2017 License: 001176
Test Date: Feb-2023
Test Sponsor: Supermicro
Hardware Availability: Jan-2023
Tested by: Supermicro
Software Availability: Dec-2022

600.perlbench_s 60
602.gcc_s 60
605.mcf_s 60
620.omnetpp_s 60
623.xalancbmk_s 60
625.x264_s 60
631.deepsjeng_s 60
641.leela_s 60
648.exchange2_s 60
657.xz_s 60

Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>60</td>
<td>13.7</td>
<td>14.0</td>
</tr>
<tr>
<td>gcc</td>
<td>60</td>
<td></td>
<td></td>
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<tr>
<td>mcf</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>omnetpp</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xalancbmk</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>x264</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>deepsjeng</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leela</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exchange2</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hardware
CPU Name: Intel Xeon Platinum 8490H
Max MHz: 3500
Nominal: 1900
Enabled: 60 cores, 1 chip
Orderable: 1 chip
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 112.5 MB I+D on chip per chip
Other: None
Memory: 512 GB
(8 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 1 x 600 GB SATA III SSD
Other: None

Software
OS: SUSE Linux Enterprise Server 15 SP4
5.14.21-150400.22-default
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
C/C++: Version 2023.0 of Intel C/C++ Compiler for Linux
Parallel: Yes
Firmware: Version 1.1 released Jan-2023
File System: btrfs
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 and OS set to prefer performance at the cost of additional power usage.
Supermicro
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>60</td>
<td>203</td>
<td>8.74</td>
<td>202</td>
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<td>8.80</td>
<td>187</td>
<td>9.48</td>
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<td>602.gcc_s</td>
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<td>351</td>
<td>11.3</td>
<td>349</td>
<td>11.4</td>
<td>352</td>
<td>11.3</td>
<td>332</td>
<td>12.0</td>
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<tr>
<td>605.mcf_s</td>
<td>60</td>
<td>222</td>
<td>21.2</td>
<td>223</td>
<td>21.1</td>
<td>222</td>
<td>21.2</td>
<td>222</td>
<td>21.1</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>60</td>
<td>148</td>
<td>11.0</td>
<td>147</td>
<td>11.1</td>
<td>147</td>
<td>11.1</td>
<td>147</td>
<td>11.1</td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>60</td>
<td>52.2</td>
<td>27.2</td>
<td>52.6</td>
<td>26.9</td>
<td>52.3</td>
<td>27.1</td>
<td>52.2</td>
<td>27.2</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>60</td>
<td>89.5</td>
<td>19.7</td>
<td>89.4</td>
<td>19.7</td>
<td>89.5</td>
<td>19.7</td>
<td>85.7</td>
<td>20.6</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>60</td>
<td>218</td>
<td>6.58</td>
<td>218</td>
<td>6.59</td>
<td>218</td>
<td>6.58</td>
<td>218</td>
<td>6.59</td>
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<tr>
<td>641.leela_s</td>
<td>60</td>
<td>325</td>
<td>5.24</td>
<td>325</td>
<td>5.25</td>
<td>326</td>
<td>5.24</td>
<td>325</td>
<td>5.25</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>60</td>
<td>131</td>
<td>22.4</td>
<td>126</td>
<td>23.3</td>
<td>127</td>
<td>23.2</td>
<td>127</td>
<td>23.3</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>60</td>
<td>260</td>
<td>23.8</td>
<td>260</td>
<td>23.8</td>
<td>259</td>
<td>23.8</td>
<td>260</td>
<td>23.8</td>
</tr>
</tbody>
</table>

**SPEC** <sup>2017_int_base</sup> = 13.7  
**SPEC** <sup>2017_int_peak</sup> = 14.0

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

**Compiler Notes**

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

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

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

**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:
- KMP_AFFINITY = "granularity=fine,scatter"
- LD_LIBRARY_PATH = "/root/cpu2017-1.1.9-2/lib/intel64:/root/cpu2017-1.1.9-2/je5.0.1-64"
- MALLOC_CONF = "retain:true"
- OMP_STACKSIZE = "192M"

**General Notes**

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Redhat Enterprise Linux 8.0
Transparent Huge Pages enabled by default
Prior to runcpu invocation

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### SPEC CPU®2017 Integer Speed Result

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<table>
<thead>
<tr>
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<tr>
<td>001176</td>
<td>Feb-2023</td>
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</table>

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>Tested by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermicro</td>
<td>Supermicro</td>
</tr>
</tbody>
</table>

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**General Notes (Continued)**

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-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.


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**Platform Notes**

**BIOS Settings:**
- Power Technology = Custom
- Power Performance Tuning = BIOS Controls EPB
- ENERGY_PERF_BIAS_CFG mode = Performance
- SNC = Enable SNC4 (4-Clusters)
- KTI Prefetch = Enable
- LLC Dead Line Alloc = Disable
- DCU Streamer Prefetcher = Disable
- Hyper-Threading [ALL] = Disable

Sysinfo program /root/cpu2017-1.1.9-2/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on 139-164 Sat Feb 11 15:14:43 2023

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

```
Table of contents
-----------------------------------------------
1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numacl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
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. Link information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
-----------------------------------------------
```

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**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Tested by:** Supermicro

---

**Platform Notes (Continued)**

Linux 139-164 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222)
x86_64 x86_64 x86_64 GNU/Linux

2. w

```
15:14:43 up 1 day,  5:12,  1 user,  load average: 0.02, 0.04, 0.00
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 07:40 2.00s 1.07s 0.01s -bash
```

3. Username

```
From environment variable $USER: root
```

4. ulimit -a

```
core file size (blocks, -c) unlimited
data seg size (kbytes, -d) unlimited
   scheduling priority (-e) 0
   file size (blocks, -f) unlimited
   pending signals (-l) 1062517
   max locked memory (kbytes, -l) 64
   max memory size (kbytes, -m) unlimited
   open files (-n) 1024
   pipe size (512 bytes, -p) 8
   POSIX message queues (bytes, -q) 819020
   real-time priority (-r) 0
   stack size (kbytes, -s) unlimited
   cpu time (seconds, -t) unlimited
   max user processes (-u) 2062517
   virtual memory (kbytes, -v) unlimited
   file locks (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-runcpu --nobuild --action validate --define default-platform-flags --c
ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=60 --tune base,peak -o all --define
intspeedaffinity --define drop_caches intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=60 --tune base,peak --output_format all
   --define intspeedaffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed
intspeed --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.016/templogs/preenv.intspeed.016.0.log
   --lognum 016.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /root/cpu2017-1.1.9-2
```

6. /proc/cpuinfo

```
model name : Intel(R) Xeon(R) Platinum 8490H
vendor_id : GenuineIntel
cpu family : 6
model : 143
stepping : 6
microcode : 0x2b000161
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores : 60
siblings : 60
```

(Continued on next page)
7. lscpu

From lscpu from util-linux 2.37.2:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Address sizes: 46 bits physical, 57 bits virtual
Byte Order: Little Endian
CPU(s): 60
On-line CPU(s) list: 0-59
Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Platinum 8490H
CPU family: 6
Model: 143
Thread(s) per core: 1
Core(s) per socket: 60
Socket(s): 1
Stepping: 6
Frequency boost: enabled
CPU max MHz: 1901.0000
CPU min MHz: 800.0000
BogoMIPS: 3800.00
Flags: fpu vme de pse mce cmov pat pse36 clflush ds longprec mmx fxsr sse sse2 sshvx tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl 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 rdrnd lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_cdp cdp lpae cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpgsb rdtsscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl 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 rdrnd lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_cdp cdp lpae cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpgsb rdtsscp
Vulnerability L1tf: Not affected
Vulnerability Itlb multihit: Not affected
Virtualization: VT-x
L1d cache: 2.8 MiB (60 instances)
L1i cache: 1.9 MiB (60 instances)
L2 cache: 120 MiB (60 instances)
L3 cache: 112.5 MiB (1 instance)
NUMA node(s): 4
NUMA node0 CPU(s): 0-14
NUMA node1 CPU(s): 15-29
NUMA node2 CPU(s): 30-44
NUMA node3 CPU(s): 45-59
NUMA node(s): 4
NUMA node0 CPU(s): 0-14
NUMA node1 CPU(s): 15-29
NUMA node2 CPU(s): 30-44
NUMA node3 CPU(s): 45-59
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
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Platform Notes (Continued)

Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tax async abort: Not affected

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>2.8M</td>
<td>12</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>1.9M</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>120M</td>
<td>16</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>112.5M</td>
<td>112.5M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>122880</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

8. numactl --hardware

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

    available: 4 nodes (0-3)
    node 0 cpus: 0-14
    node 0 size: 128656 MB
    node 0 free: 127760 MB
    node 1 cpus: 15-29
    node 1 size: 128985 MB
    node 1 free: 128844 MB
    node 2 cpus: 30-44
    node 2 size: 129020 MB
    node 2 free: 120128 MB
    node 3 cpus: 45-59
    node 3 size: 128991 MB
    node 3 free: 128734 MB
    node distances:
        node   0   1   2   3
        0:  10  12  12  12
        1:  12  10  12  12
        2:  12  12  10  12
        3:  12  12  12  10

9. /proc/meminfo

  MemTotal: 528029332 kB

10. who -r

   run-level 3 Feb 10 10:02

11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)

   Default Target Status
   multi-user running

12. Services, from systemctl list-unit-files

   STATE   UNIT FILES
   enabled YaST2-Firstboot YaST2-Second-Stage audidt cron display-manager getty@ haveged irqbalance
   issue-generator kbdsettings klog kvm-monitor nscd postfix purge-kernels rollback rsyslog
   smartd sshd wicked wickeded-auto4 wickeded-dhcp4 wickeded-dhcp6 wickeded-nanny
   enabled-runtime systemctl-remount-fs
   disabled apparmor autos turbo-remote nscript blk-availability boot-sysct1 ca-certificates
   chrony-wait chronyd console-getty cups cups-browsed debug-shell etables

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Platform Notes (Continued)

13. Linux kernel boot-time arguments, from /proc/cmdline
   BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
   root=UUID=2d678d2d-7c7c-4447-9a76-01d4d4bc98fa
   splash=silent
   mitigations=auto
   quiet
   security=apparmor

14. cpupower frequency-info
   analyzing CPU 0:
   current policy: frequency should be within 800 MHz and 1.90 GHz.
   The governor "ondemand" may decide which speed to use
   within this range.
   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
   vm.extfrag_threshold 500
   vm.m IMappered mmaped_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+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/kluge
    alloc_sleep_millisecs 60000
    defrag 1

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Platform Notes (Continued)

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 SP4

19. Disk information
SPEC is set to: /root/cpu2017-1.1.9-2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 559G 444G 116G 80% /root

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

21. dmidecode
Additional information from dmidecode 3.2 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 Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800

22. BIOS
(BThis section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 1.1
BIOS Date: 01/20/2023
BIOS Revision: 5.29

Compiler Version Notes

---
C       | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
       | 657.xz_s(base, peak)
---
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

---
C++     | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
       | 641.leela_s(base, peak)
---
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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SPEC CPU®2017 Integer Speed Result
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Supermicro
SuperServer SYS-211E-FRDN2T
(X13SEM-TF, Intel Xeon Platinum 8490H)

SPECspeed®2017_int_base = 13.7
SPECspeed®2017_int_peak = 14.0

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

Test Date: Feb-2023
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Compiler Version Notes (Continued)

Fortran | 648.exchange2_s(base, peak)
------------------------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:
-m64 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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Base Optimization Flags (Continued)

Fortran benchmarks:
-m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
600.perlbench_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

602.gcc_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

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Peak Optimization Flags (Continued)

605.mcf_s: basepeak = yes

625.x264_s: -m64 -std=c11 -W1,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

657.xz_s: basepeak = yes

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

648.exchange2_s: basepeak = yes

The flags files that were used to format this result can be browsed at:
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml
http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SPR-revC.xml

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