SPEC CPU®2017 Floating Point Rate Result

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Fujitsu

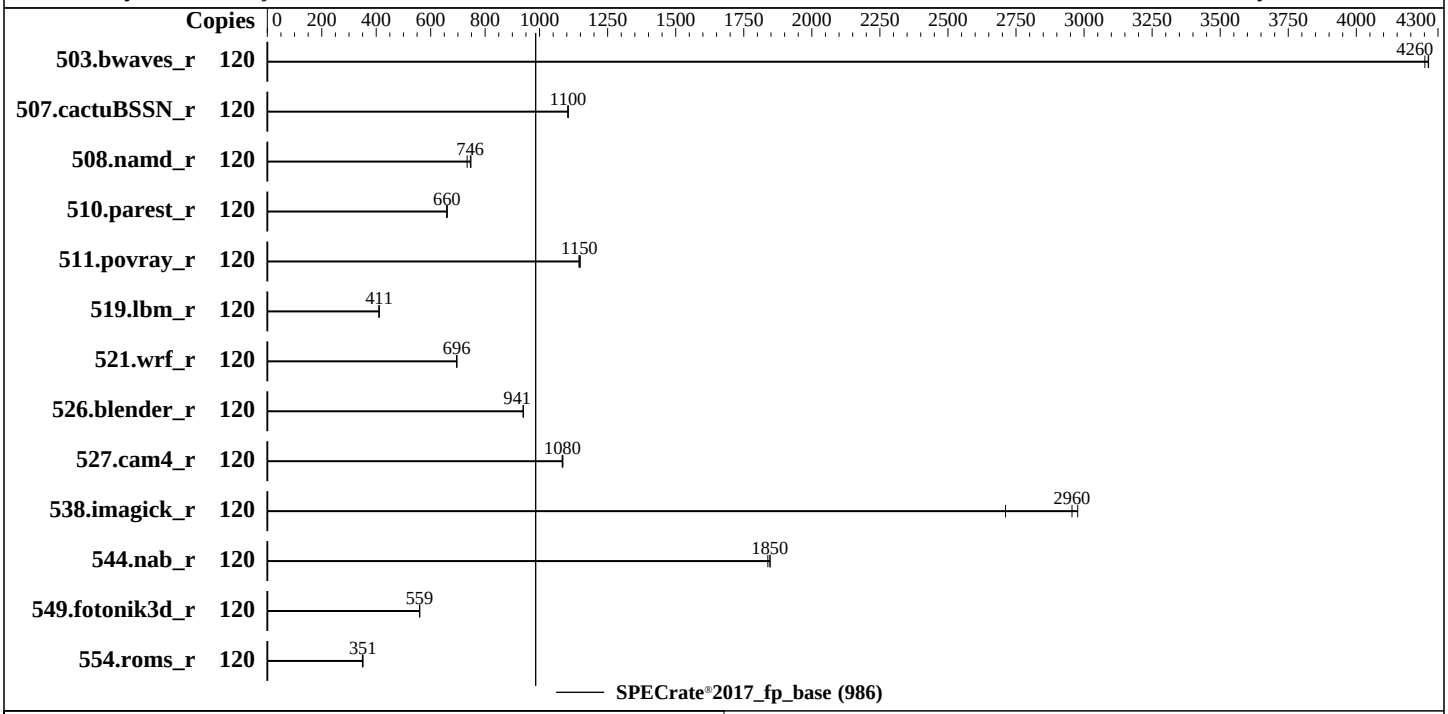
PRIMERGY CX2550 M7, Intel Xeon Platinum 8490H, 1.90GHz

SPECrate®2017_fp_base = 986

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Mar-2023
Hardware Availability: May-2023
Software Availability: Dec-2022



Hardware

CPU Name:	Intel Xeon Platinum 8490H
Max MHz:	3500
Nominal:	1900
Enabled:	120 cores, 2 chips
Orderable:	1,2 chips
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:	1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 1 TB SATA HDD, 7200 RPM
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;
Parallel:	No
Firmware:	Fujitsu BIOS Version V1.0.0.0 R1.10.0 for D3988-A1x. Released May-2023 tested as V1.0.0.0 R0.27.1 for D3988-A1x Dec-2022
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	jemalloc memory allocator V5.0.1
Power Management:	BIOS and OS set to prefer performance at the cost ofadditional power usage

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	120	**282**	**4260**	282	4270	283	4250							
507.cactuBSSN_r	120	137	1110	**137**	**1100**	138	1100							
508.namd_r	120	152	748	**153**	**746**	155	734							
510.parest_r	120	**476**	**660**	476	659	475	661							
511.povray_r	120	**244**	**1150**	245	1140	244	1150							
519.lbm_r	120	**308**	**411**	308	411	308	411							
521.wrf_r	120	386	696	387	695	**386**	**696**							
526.blender_r	120	195	939	**194**	**941**	194	941							
527.cam4_r	120	193	1090	**193**	**1080**	194	1080							
538.imagick_r	120	**101**	**2960**	110	2710	100	2980							
544.nab_r	120	109	1850	110	1840	**109**	**1850**							
549.fotonik3d_r	120	837	559	**836**	**559**	835	560							
554.roms_r	120	543	351	546	349	**544**	**351**							

SPECrate®2017_fp_base = 986

SPECrate®2017_fp_peak = Not Run

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

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
cpupower -c all frequency-set -g performance
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
      "/home/Benchmark/speccpu/lib/intel64:/home/Benchmark/speccpu/je5.0.1-64"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
```

(Continued on next page)

General Notes (Continued)

```
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>       /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS configuration:
Hyper Threading = Disabled
Package C State limit = C0
CPU Performance Boost = Aggressive
SNC (Sub NUMA) = Enable SNC4

Sysinfo program /home/Benchmark/speccpu/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Wed Mar 22 18:05:03 2023

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

------------------------------------------------------------
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------------------------------------------------------------
 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 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
```

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Platform Notes (Continued)

```
 15. sysctl
 16. /sys/kernel/mm/transparent_hugepage
 17. /sys/kernel/mm/transparent_hugepage/khugepaged
 18. OS release
 19. Disk information
 20. /sys/devices/virtual/dmi/id
 21. dmidecode
 22. BIOS
------------------------------------------------------------

------------------------------------------------------------
 1. uname -a
   Linux localhost 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
     18:05:03 up 1 min,  1 user,  load average: 3.30, 1.63, 0.61
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                18:04   15.00s  1.49s  0.16s /home/Benchmark/ptu-unified/ptu -i 5000000
   -filter 0x3f -ts -csv -log -logdir . -logname ptu_fprate_SPR__2017_withptu_202303221804

------------------------------------------------------------
 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                 (-i) 4125337
   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) 819200
   real-time priority              (-r) 0
   stack size              (kbytes, -s) unlimited
   cpu time               (seconds, -t) unlimited
   max user processes              (-u) 4125337
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited

------------------------------------------------------------
 5. sysinfo process ancestry
```


(Continued on next page)

Platform Notes (Continued)

```
 /usr/lib/systemd/systemd --switched-root --system --deserialize 30
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=120 -c
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=60 --define physicalfirst
    --define invoke_with_interleave --define drop_caches --tune base -o all fprate
 runcpu --nobuild --action validate --define default-platform-flags --define numcopies=120 --configfile
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=60 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
    rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
    $SPEC/tmp/CPU2017.001/templogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/Benchmark/speccpu

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Platinum 8490H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0000c0
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores       : 60
    siblings        : 60
    2 physical ids (chips)
    120 processors (hardware threads)
    physical id 0: core ids 0-59
    physical id 1: core ids 0-59
    physical id 0: apicids
   0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72
    ,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118
    physical id 1: apicids
   128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,1
   80,182,184,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,23
    2,234,236,238,240,242,244,246
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems.  Use the above data carefully.

------------------------------------------------------------
7. lscpu

From lscpu from util-linux 2.37.2:
  Architecture:                    x86_64
  CPU op-mode(s):                  32-bit, 64-bit
  Address sizes:                   46 bits physical, 57 bits virtual
```

(Continued on next page)

Platform Notes (Continued)

```
Byte Order:                      Little Endian
CPU(s):                          120
On-line CPU(s) list:             0-119
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):                       2
Stepping:                        8
CPU max MHz:                     3500.0000
CPU min MHz:                     800.0000
BogoMIPS:                        3800.00
Flags:                           fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                                 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
                                 lm constant_tsc art arch_perfmon 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 rdrand
                                 lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
                                 invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                                 tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle
                                 avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
                                 avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                                 xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                                 cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                                 arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi umip pku
                                 ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                                 tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b
                                 enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr avx512_fp16
                                 amx_tile flush_l1d arch_capabilities
Virtualization:                  VT-x
L1d cache:                       5.6 MiB (120 instances)
L1i cache:                       3.8 MiB (120 instances)
L2 cache:                        240 MiB (120 instances)
L3 cache:                        225 MiB (2 instances)
NUMA node(s):                    8
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 node4 CPU(s):               60-74
NUMA node5 CPU(s):               75-89
NUMA node6 CPU(s):               90-104
NUMA node7 CPU(s):               105-119
Vulnerability Itlb multihit:     Not affected
```

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Platform Notes (Continued)

```
   Vulnerability L1tf:                Not affected
   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 Tsx async abort:     Not affected

 From lscpu --cache:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL   SETS PHY-LINE COHERENCY-SIZE
      L1d       48K     5.6M   12 Data            1     64        1             64
      L1i       32K     3.8M    8 Instruction     1     64        1             64
      L2         2M     240M   16 Unified         2   2048        1             64
      L3     112.5M     225M   15 Unified         3 122880        1             64

 ------------------------------------------------------------
 8. numactl --hardware
 NOTE: a numactl 'node' might or might not correspond to a physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0-14
   node 0 size: 128601 MB
   node 0 free: 127150 MB
   node 1 cpus: 15-29
   node 1 size: 129020 MB
   node 1 free: 128696 MB
   node 2 cpus: 30-44
   node 2 size: 128985 MB
   node 2 free: 128737 MB
   node 3 cpus: 45-59
   node 3 size: 129020 MB
   node 3 free: 128721 MB
   node 4 cpus: 60-74
   node 4 size: 129020 MB
   node 4 free: 128777 MB
   node 5 cpus: 75-89
   node 5 size: 129020 MB
   node 5 free: 128754 MB
   node 6 cpus: 90-104
   node 6 size: 129020 MB
   node 6 free: 128733 MB
   node 7 cpus: 105-119
   node 7 size: 128670 MB
   node 7 free: 128397 MB
   node distances:
   node   0   1   2   3   4   5   6   7
     0:  10  12  12  12  21  21  21  21
```

(Continued on next page)

Platform Notes (Continued)

```
     1:  12  10  12  12  21  21  21  21
     2:  12  12  10  12  21  21  21  21
     3:  12  12  12  10  21  21  21  21
     4:  21  21  21  21  10  12  12  12
     5:  21  21  21  21  12  10  12  12
     6:  21  21  21  21  12  12  10  12
     7:  21  21  21  21  12  12  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056110728 kB

------------------------------------------------------------
10. who -r
  run-level 3 Mar 22 18:04

------------------------------------------------------------
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 apparmor auditd cron display-manager getty@ haveged
                   irqbalance iscsi issue-generator kbdsettings kdump kdump-early klog libvirtd lvm2-monitor
                   nscd postfix purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4
                       wickedd-dhcp6 wickedd-nanny
  enabled-runtime  systemd-remount-fs
  disabled         autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                   chronyd console-getty cups cups-browsed debug-shell dnsmasq ebtables exchange-bmc-os-info
                     firewalld gpm grub2-once haveged-switch-root ipmi ipmievd iscsi-init iscsid
                    issue-add-ssh-keys kexec-load ksm kvm_stat libstoragemgmt libvirt-guests lunmask
                   man-db-create multipathd nfs nfs-blkmap nfs-server nfsserver rdisc rpcbind rpmconfigcheck
                   rsyncd serial-getty@ smartd_generate_opts snmpd snmptrapd strongswan strongswan-starter
                    svnserve systemd-boot-check-no-failures systemd-network-generator systemd-nspawn@
                   systemd-sysext systemd-time-wait-sync systemd-timesyncd tcsd udisks2 virtinterfaced
                   virtnetworkd virtnodedevd virtnwfilterd virtproxyd virtqemud virtsecretd virtstoraged
  indirect             pcscd virtlockd virtlogd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
  root=UUID=23234968-5b68-46e8-83be-a74bc7548b63
  splash=silent
  resume=/dev/disk/by-uuid/bcf0d2ab-8339-4550-95f8-8bd850a722be
  mitigations=auto
```

(Continued on next page)

Platform Notes (Continued)

```
  quiet
  security=apparmor
  crashkernel=321M,high
  crashkernel=72M,low

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.50 GHz.
                    The governor "performance" 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.min_unmapped_ratio              1
  vm.nr_hugepages                    0
  vm.nr_hugepages_mempolicy          0
  vm.nr_overcommit_hugepages         0
  vm.swappiness                     60
  vm.watermark_boost_factor      15000
  vm.watermark_scale_factor         10
  vm.zone_reclaim_mode               0

------------------------------------------------------------
16. /sys/kernel/mm/transparent_hugepage
  defrag          always defer defer+madvise [madvise] never
  enabled         [always] madvise never
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force

------------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
```

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Platform Notes (Continued)

```
  defrag                    1
  max_ptes_none           511
  max_ptes_shared         256
  max_ptes_swap            64
  pages_to_scan          4096
  scan_sleep_millisecs  10000

------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
  os-release SUSE Linux Enterprise Server 15 SP4

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/Benchmark/speccpu
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda3      xfs   262G   29G  233G  11% /home

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:          FUJITSU
    Product:         PRIMERGY CX2550 M7
    Product Family: SERVER
    Serial:          BBBB000001

------------------------------------------------------------
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:
     14x Samsung M321R8GA0BB0-CQKEG 64 GB 2 rank 4800
     2x Samsung M321R8GA0BB0-CQKVG 64 GB 2 rank 4800


------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       FUJITSU
   BIOS Version:      V1.0.0.0 R0.27.0 for D3988-A1x
   BIOS Date:         12/22/2022
   BIOS Revision:     0.27
   Firmware Revision: 2.0
```

Compiler Version Notes

```
==============================================================================
C               | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
------------------------------------------------------------------------------
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++             | 508.namd_r(base) 510.parest_r(base)
------------------------------------------------------------------------------
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++, C          | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
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.
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++, C, Fortran | 507.cactuBSSN_r(base)
------------------------------------------------------------------------------
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.
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.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
Fortran         | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
```

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Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------

==============================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
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.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Benchmarks using both Fortran and C:
ifx icx

Benchmarks using both C and C++:
icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx ifx

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

(Continued on next page)

Base Portability Flags (Continued)

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

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

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

Benchmarks using both Fortran and C:
-w -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both C and C++:
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

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
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-SPR-RevA.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/Fujitsu-Platform-Settings-V1.0-SPR-RevA.xml

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