



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 19

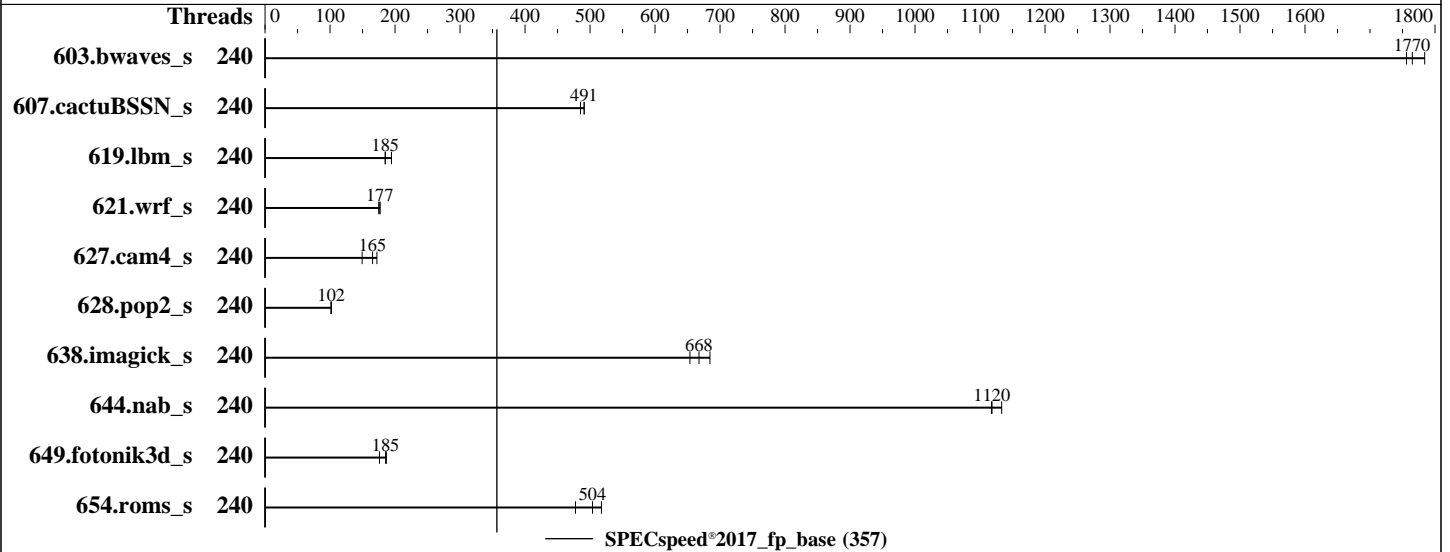
Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Apr-2023

Hardware Availability: Jul-2023

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Platinum 8490H  
 Max MHz: 3500  
 Nominal: 1900  
 Enabled: 240 cores, 4 chips  
 Orderable: 2,4 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: 2 TB (32 x 64 GB 2Rx4 PC5-4800B-R)  
 Storage: 1 x 1.92 TB SAS 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;  
 Parallel: Yes  
 Firmware: Fujitsu BIOS Version V1.0.0.0 R1.10.0 for D3986-A1. Released Jul-2023 tested as V1.0.0.0 R0.16.0 for D3986-A1 Mar-2023  
 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 set to prefer performance at the cost of additional power usage



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

Test Date: Apr-2023  
Hardware Availability: Jul-2023  
Software Availability: Dec-2022

## Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	240	33.6	1760	33.1	1780	<b><u>33.4</u></b>	<b><u>1770</u></b>							
607.cactuBSSN_s	240	34.3	485	33.9	491	<b><u>34.0</u></b>	<b><u>491</u></b>							
619.lbm_s	240	26.9	195	28.3	185	<b><u>28.3</u></b>	<b><u>185</u></b>							
621.wrf_s	240	75.7	175	74.8	177	<b><u>74.9</u></b>	<b><u>177</u></b>							
627.cam4_s	240	59.3	149	<b><u>53.6</u></b>	<b><u>165</u></b>	51.5	172							
628.pop2_s	240	117	102	<b><u>116</u></b>	<b><u>102</u></b>	116	102							
638.imagick_s	240	<b><u>21.6</u></b>	<b><u>668</u></b>	21.1	684	22.1	654							
644.nab_s	240	<b><u>15.6</u></b>	<b><u>1120</u></b>	15.4	1130	15.6	1120							
649.fotonik3d_s	240	<b><u>49.2</u></b>	<b><u>185</u></b>	48.8	187	51.8	176							
654.roms_s	240	30.4	518	<b><u>31.3</u></b>	<b><u>504</u></b>	33.0	478							

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

## 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,compact"  
LD\_LIBRARY\_PATH = "/home/Benchmark/speccpu/lib/intel64:/home/Benchmark/speccpu/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  
Filesystem page cache synced and cleared with:  
sync; echo 3> /proc/sys/vm/drop\_caches  
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>



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

## Platform Notes

BIOS configuration:  
Hyper Threading = Disabled  
Package C State limit = C0  
LLC Prefetch = Enabled  
Homeless Prefetch = Enabled  
DBP-F = Enabled  
CPU Performance Boost = Aggressive

Sysinfo program /home/Benchmark/speccpu/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Sat Apr 8 06:36:56 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. 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
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
06:36:56 up 7:18, 1 user, load average: 54.22, 159.26, 187.10
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 23:30 5:00m 4.98s 2.60s -bash
```

```
3. Username
From environment variable $USER: root
```

```
4. ulimit -a
core file size (blocks, -c) unlimited
data seg size (kbytes, -d) unlimited
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H,  
1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```

scheduling priority      (-e) 0
file size                (blocks, -f) unlimited
pending signals         (-i) 8253899
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) 8253899
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
-bash
runcpu --define default-platform-flags -c ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=240
--tune base -o all --define drop_caches fpspeed
runcpu --define default-platform-flags --configfile ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define
cores=240 --tune base --output_format all --define drop_caches --nopower --runmode speed --tune base
--size refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/templogs/preenv.fpspeed.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      : 0x2b000161
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 60
siblings       : 60
4 physical ids (chips)
240 processors (hardware threads)
physical id 0: core ids 0-59
physical id 1: core ids 0-59
physical id 2: core ids 0-59
physical id 3: 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
physical id 2: apicids
256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,3
08,310,312,314,316,318,320,322,324,326,328,330,332,334,336,338,340,342,344,346,348,350,352,354,356,358,36
0,362,364,366,368,370,372,374
physical id 3: apicids
384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,422,424,426,428,430,432,434,4

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

36,438,440,442,444,446,448,450,452,454,456,458,460,462,464,466,468,470,472,474,476,478,480,482,484,486,488,490,492,494,496,498,500,502

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
Byte Order:            Little Endian
CPU(s):                240
On-line CPU(s) list:  0-239
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):             4
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 aperfperf 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_lld arch_capabilities
Virtualization:        VT-x
L1d cache:             11.3 MiB (240 instances)
L1i cache:             7.5 MiB (240 instances)
L2 cache:              480 MiB (240 instances)
L3 cache:              450 MiB (4 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-59
NUMA node1 CPU(s):    60-119
NUMA node2 CPU(s):    120-179
NUMA node3 CPU(s):    180-239
Vulnerability Itlb multihit: Not affected
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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

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	11.3M	12	Data	1	64	1	64
L1i	32K	7.5M	8	Instruction	1	64	1	64
L2	2M	480M	16	Unified	2	2048	1	64
L3	112.5M	450M	15	Unified	3	122880	1	64

8. numactl --hardware

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

```

available: 4 nodes (0-3)
node 0 cpus: 0-59
node 0 size: 515627 MB
node 0 free: 513652 MB
node 1 cpus: 60-119
node 1 size: 516080 MB
node 1 free: 514385 MB
node 2 cpus: 120-179
node 2 size: 516080 MB
node 2 free: 514331 MB
node 3 cpus: 180-239
node 3 size: 515709 MB
node 3 free: 513774 MB
node distances:
node  0  1  2  3
 0:  10  21  21  31
 1:  21  10  31  21
 2:  21  31  10  21
 3:  31  21  21  10

```

9. /proc/meminfo

MemTotal: 2113023248 kB

10. who -r

run-level 3 Apr 7 23:19

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 bluetooth cron display-manager getty@
               haveged irqbalance iscsi issue-generator kbdsettings kdump kdump-early klog 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       accounts-daemon appstream-sync-cache autofs autoyast-initscripts blk-availability
               bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups
               cups-browsed debug-shell ebttables exchange-bmc-os-info firewallld gpm grub2-once
               haveged-switch-root ipmi ipmievd iscsi-init iscsid iscsiuiio issue-add-ssh-keys kexec-load
               lunmask man-db-create multipathd nfs nfs-blkmap nmb numad ostree-remount rdisc rpcbind

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```
rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd_generate_opts smb snmpd snmptrapd
speech-dispatcherd systemd-boot-check-no-failures systemd-network-generator systemd-sysex
systemd-time-wait-sync systemd-timesyncd udisks2 upower
wickedd
indirect
```

```
-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
root=UUID=8b4cf1a0-f943-46c1-a409-c2bca0c1173e
splash=silent
mitigations=auto
quiet
security=apparmor
crashkernel=324M,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 "powersave" 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
defrag                 1
max_ptes_none         511
-----
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```
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/sda2 xfs 1.8T 33G 1.8T 2% /

-----  
20. /sys/devices/virtual/dmi/id  
Vendor: FUJITSU LIMITED  
Product Family: SERVER  
Serial: SM2305S00822

-----  
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:  
7x Samsung M321R8GA0BB0-CQKDG 64 GB 2 rank 4800  
6x Samsung M321R8GA0BB0-CQKEG 64 GB 2 rank 4800  
1x Samsung M321R8GA0BB0-CQKMG 64 GB 2 rank 4800  
18x 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 R0.16.0 for D3986-A1  
BIOS Date: 03/04/2023  
BIOS Revision: 0.16  
Firmware Revision: 2.2

### Compiler Version Notes

=====  
C | 619.lbm\_s(base) 638.imagick\_s(base) 644.nab\_s(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, Fortran | 607.cactuBSSN\_s(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

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

## Compiler Version Notes (Continued)

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 | 603.bwaves\_s(base) 649.fotonik3d\_s(base) 654.roms\_s(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.

=====  
Fortran, C | 621.wrf\_s(base) 627.cam4\_s(base) 628.pop2\_s(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

Fortran benchmarks:  
ifx

Benchmarks using both Fortran and C:  
ifx icx

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

## Base Portability Flags

603.bwaves\_s: -DSPEC\_LP64  
607.cactuBSSN\_s: -DSPEC\_LP64  
619.lbm\_s: -DSPEC\_LP64  
621.wrf\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian  
627.cam4\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG  
628.pop2\_s: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian  
-assume byterecl  
638.imagick\_s: -DSPEC\_LP64  
644.nab\_s: -DSPEC\_LP64  
649.fotonik3d\_s: -DSPEC\_LP64

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H, 1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

Test Date: Apr-2023  
Hardware Availability: Jul-2023  
Software Availability: Dec-2022

## Base Portability Flags (Continued)

654.roms\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

Benchmarks using Fortran, C, and C++:

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

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-RevB.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-RevB.xml>



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Fujitsu

PRIMEQUEST 4400E, Intel Xeon Platinum 8490H,  
1.90GHz

SPECspeed®2017\_fp\_base = 357

SPECspeed®2017\_fp\_peak = Not Run

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

**Test Date:** Apr-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2023-04-07 17:36:55-0400.  
Report generated on 2023-04-26 09:51:06 by CPU2017 PDF formatter v6716.  
Originally published on 2023-04-25.