



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_peak = Not Run

CPU2017 License: 19

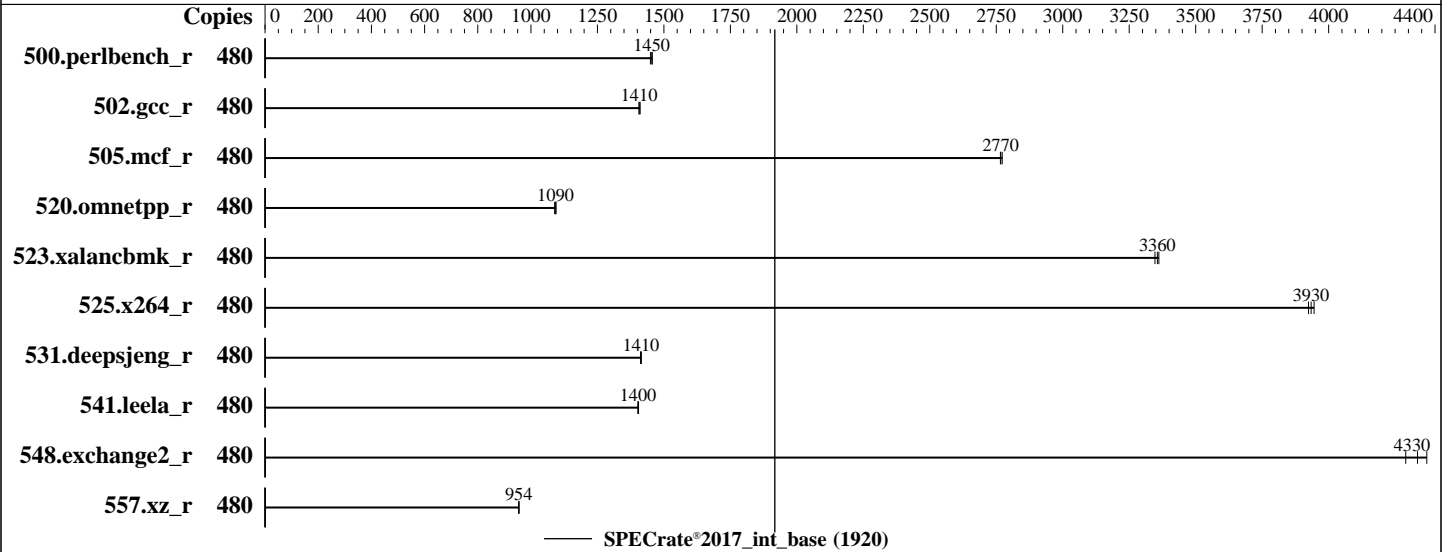
Test Sponsor: Fujitsu

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, 2 threads/core
 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: No
 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: None
 Power Management: BIOS set to prefer performance at the cost of additional power usage



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
500.perlbench_r	480	527	1450	<u>525</u>	<u>1450</u>	525	1460									
502.gcc_r	480	482	1410	<u>483</u>	<u>1410</u>	483	1410									
505.mcf_r	480	<u>280</u>	<u>2770</u>	280	2770	280	2770									
520.omnetpp_r	480	576	1090	578	1090	<u>576</u>	<u>1090</u>									
523.xalancbmk_r	480	151	3350	<u>151</u>	<u>3360</u>	151	3360									
525.x264_r	480	214	3920	<u>214</u>	<u>3930</u>	213	3950									
531.deepsjeng_r	480	389	1410	<u>389</u>	<u>1410</u>	389	1410									
541.leela_r	480	567	1400	566	1400	<u>567</u>	<u>1400</u>									
548.exchange2_r	480	293	4290	288	4370	<u>290</u>	<u>4330</u>									
557.xz_r	480	<u>543</u>	<u>954</u>	543	955	544	954									

SPECrate®2017_int_base = 1920

SPECrate®2017_int_peak = Not Run

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.xalancbmk_r / 623.xalancbmk_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.

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"

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/lib/ia32:/home/Benchmark/speccpu/je5.0.1-32"
MALLOC_CONF = "retain:true"
```



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_peak = Not Run

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Apr-2023

Hardware Availability: Jul-2023

Software Availability: Dec-2022

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
 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.

Platform Notes

BIOS configuration:
 DCU Streamer Prefetcher = Disabled
 Package C State limit = C0
 LLC Dead Line Alloc = Disabled
 CPU Performance Boost = Aggressive
 SNC (Sub NUMA) = Enable SNC4
 FAN Control = Full

Sysinfo program /home/Benchmark/speccpu/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Fri Apr 7 01:44:53 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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

- 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

- w
01:44:53 up 3 min, 2 users, load average: 19.25, 30.41, 14.07

USER	TTY	FROM	LOGIN@	IDLE	JCPU	PCPU	WHAT
root	tty1	-	01:43	10.00s	3.38s	0.48s	/home/Benchmark/PTU/ptat -mon -i 500000
-filter	0x3f	-ts -y					
root	pts/0	10.41.49.68	01:43	13.00s	0.08s	0.08s	-bash

- Username
From environment variable \$USER: root

- 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)	8253511
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)	8253511
virtual memory	(kbytes, -v)	unlimited
file locks	(-x)	unlimited

- sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=480 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=240 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=480 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=240 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
rate --tune base --size refrate intrate --nopreenv --note-preenv --logfile
\$SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
specperl \$SPEC/bin/sysinfo
\$SPEC = /home/Benchmark/speccpu

- /proc/cpuinfo

model name	: Intel(R) Xeon(R) Platinum 8490H
vendor_id	: GenuineIntel
cpu family	: 6
model	: 143
stepping	: 8
microcode	: 0x2b000161

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

```
bugs          : spectre_v1 spectre_v2 spec_store_bypass swappg
cpu cores     : 60
siblings      : 120
4 physical ids (chips)
480 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 0-119
physical id 1: apicids 128-247
physical id 2: apicids 256-375
physical id 3: apicids 384-503
```

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):                480
On-line CPU(s) list:   0-479
Vendor ID:             GenuineIntel
Model name:            Intel(R) Xeon(R) Platinum 8490H
CPU family:            6
Model:                 143
Thread(s) per core:    2
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 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_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)
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

```

NUMA node(s): 16
NUMA node0 CPU(s): 0-14,240-254
NUMA node1 CPU(s): 15-29,255-269
NUMA node2 CPU(s): 30-44,270-284
NUMA node3 CPU(s): 45-59,285-299
NUMA node4 CPU(s): 60-74,300-314
NUMA node5 CPU(s): 75-89,315-329
NUMA node6 CPU(s): 90-104,330-344
NUMA node7 CPU(s): 105-119,345-359
NUMA node8 CPU(s): 120-134,360-374
NUMA node9 CPU(s): 135-149,375-389
NUMA node10 CPU(s): 150-164,390-404
NUMA node11 CPU(s): 165-179,405-419
NUMA node12 CPU(s): 180-194,420-434
NUMA node13 CPU(s): 195-209,435-449
NUMA node14 CPU(s): 210-224,450-464
NUMA node15 CPU(s): 225-239,465-479
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf: 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	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: 16 nodes (0-15)
node 0 cpus: 0-14,240-254
node 0 size: 128597 MB
node 0 free: 126642 MB
node 1 cpus: 15-29,255-269
node 1 size: 129016 MB
node 1 free: 128266 MB
node 2 cpus: 30-44,270-284
node 2 size: 129016 MB
node 2 free: 128189 MB
node 3 cpus: 45-59,285-299
node 3 size: 129016 MB
node 3 free: 128337 MB
node 4 cpus: 60-74,300-314
node 4 size: 129016 MB
node 4 free: 128426 MB
node 5 cpus: 75-89,315-329
node 5 size: 129016 MB
node 5 free: 128462 MB
node 6 cpus: 90-104,330-344
node 6 size: 129016 MB
node 6 free: 128441 MB
node 7 cpus: 105-119,345-359

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

```

node 7 size: 129016 MB
node 7 free: 128471 MB
node 8 cpus: 120-134,360-374
node 8 size: 129016 MB
node 8 free: 128385 MB
node 9 cpus: 135-149,375-389
node 9 size: 129016 MB
node 9 free: 128418 MB
node 10 cpus: 150-164,390-404
node 10 size: 129016 MB
node 10 free: 128448 MB
node 11 cpus: 165-179,405-419
node 11 size: 129016 MB
node 11 free: 128438 MB
node 12 cpus: 180-194,420-434
node 12 size: 129016 MB
node 12 free: 128696 MB
node 13 cpus: 195-209,435-449
node 13 size: 129016 MB
node 13 free: 128694 MB
node 14 cpus: 210-224,450-464
node 14 size: 129016 MB
node 14 free: 128675 MB
node 15 cpus: 225-239,465-479
node 15 size: 128574 MB
node 15 free: 128240 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
0:  10 12 12 12 21 21 21 21 21 21 21 21 31 31 31 31
1:  12 10 12 12 21 21 21 21 21 21 21 21 31 31 31 31
2:  12 12 10 12 21 21 21 21 21 21 21 21 31 31 31 31
3:  12 12 12 10 21 21 21 21 21 21 21 21 31 31 31 31
4:  21 21 21 21 10 12 12 12 31 31 31 31 21 21 21 21
5:  21 21 21 21 12 10 12 12 31 31 31 31 21 21 21 21
6:  21 21 21 21 12 12 10 12 31 31 31 31 21 21 21 21
7:  21 21 21 21 12 12 12 10 31 31 31 31 21 21 21 21
8:  21 21 21 21 31 31 31 31 10 12 12 12 21 21 21 21
9:  21 21 21 21 31 31 31 31 12 10 12 12 21 21 21 21
10: 21 21 21 21 31 31 31 31 12 12 10 12 21 21 21 21
11: 21 21 21 21 31 31 31 31 12 12 12 10 21 21 21 21
12: 31 31 31 31 21 21 21 21 21 21 21 21 10 12 12 12
13: 31 31 31 31 21 21 21 21 21 21 21 21 12 10 12 12
14: 31 31 31 31 21 21 21 21 21 21 21 21 12 12 10 12
15: 31 31 31 31 21 21 21 21 21 21 21 21 12 12 12 10

```

```

9. /proc/meminfo
MemTotal: 2112923728 kB

```

```

10. who -r
run-level 3 Apr 7 01:43

```

```

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

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

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 iscsiuio issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb numad ostree-remount rdisc rpcbind 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
indirect	wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
 BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
 root=UUID=8b4cfla0-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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

```

16. /sys/kernel/mm/transparent_hugepage
   defrag          always defer 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/khugepaged
   alloc_sleep_millisecs 60000
   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/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 | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(base)

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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)

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++ | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_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.

=====
Fortran | 548.exchange2_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.

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Fujitsu

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

SPECrate®2017_int_base = 1920

SPECrate®2017_int_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 Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

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 and SPECrate 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.

Tested with SPEC CPU®2017 v1.1.9 on 2023-04-06 12:44:52-0400.
Report generated on 2024-01-29 17:33:54 by CPU2017 PDF formatter v6716.
Originally published on 2023-04-25.