



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

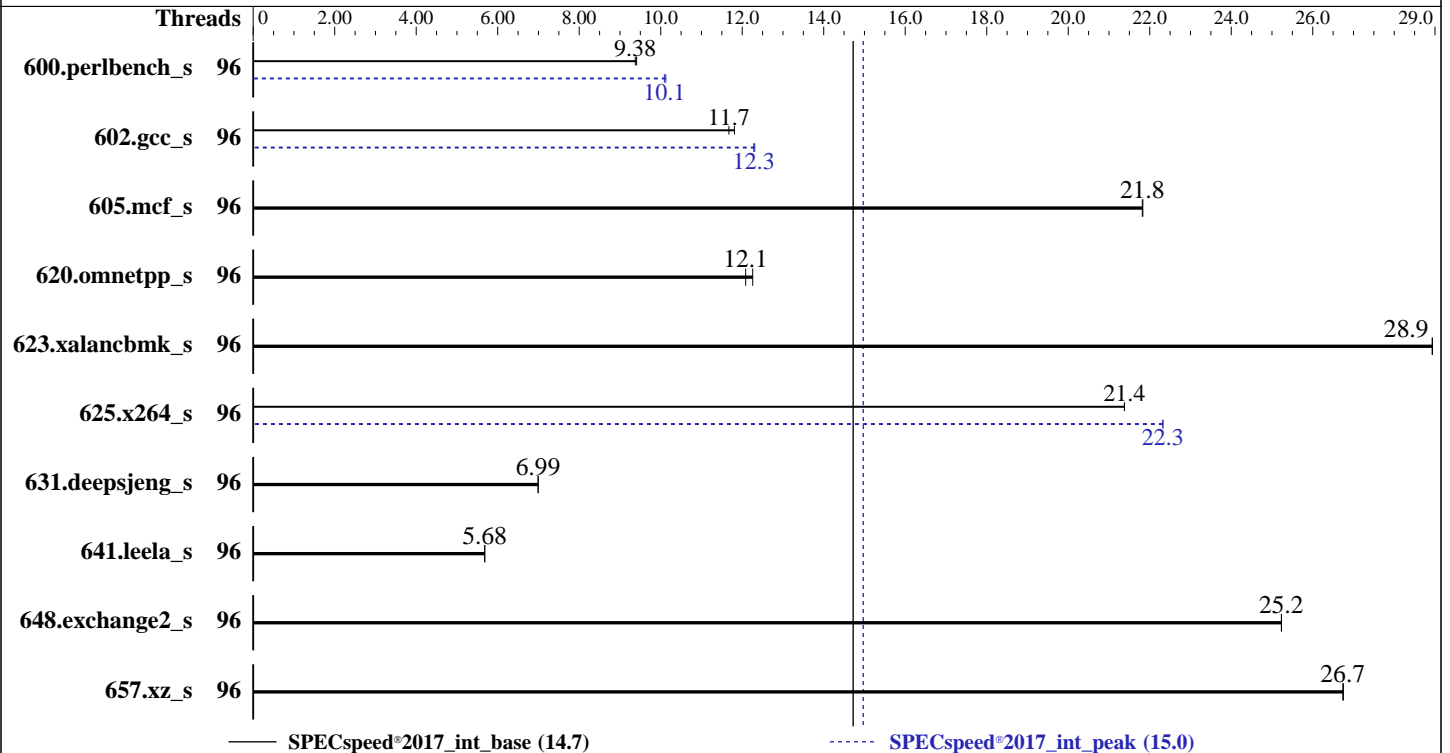
Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: May-2023

Tested by: Dell Inc.

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Platinum 8468
 Max MHz: 3800
 Nominal: 2100
 Enabled: 96 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: 105 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 70 GB on tmpfs
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4
 5.14.21-150400.19-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: Version 1.0.0 released Mar-2023
 File System: tmpfs
 System State: Run level 5 (graphical 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.



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	96	189	9.41	189	9.38			96	176	10.1	175	10.1		
602.gcc_s	96	341	11.7	337	11.8			96	324	12.3	324	12.3		
605.mcf_s	96	216	21.8	216	21.8			96	216	21.8	216	21.8		
620.omnetpp_s	96	133	12.3	135	12.1			96	133	12.3	135	12.1		
623.xalancbmk_s	96	49.0	28.9	49.0	28.9			96	49.0	28.9	49.0	28.9		
625.x264_s	96	82.5	21.4	82.5	21.4			96	79.0	22.3	79.0	22.3		
631.deepsjeng_s	96	205	6.99	205	6.99			96	205	6.99	205	6.99		
641.leela_s	96	300	5.68	300	5.68			96	300	5.68	300	5.68		
648.exchange2_s	96	117	25.2	117	25.2			96	117	25.2	117	25.2		
657.xz_s	96	231	26.8	231	26.7			96	231	26.8	231	26.7		

SPECspeed®2017_int_base = **14.7**

SPECspeed®2017_int_peak = **15.0**

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.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.

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 =

"/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2023.0/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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

General Notes (Continued)

Prior to runcpu invocation
 Filesystem page cache synced and cleared with:
 sync; echo 3> /proc/sys/vm/drop_caches
 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>

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.

Benchmark run from a 70 GB ramdisk created with the cmd: "mount -t tmpfs -o size=70G tmpfs /mnt/ramdisk"

Platform Notes

BIOS settings:

```

  ADDDC Setting : Disabled
  DIMM Self Healing on
  Uncorrectable Memory Error : Disabled
  Logical Processor : Disabled
  Virtualization Technology : Disabled
  Sub NUMA Cluster : 2-way Clustering
  Optimizer Mode : Enabled

  System Profile : Custom
  CPU Power Management : Maximum Performance
  C1E : Disabled
  C States : Autonomous
  Memory Patrol Scrub : Disabled
  Energy Efficiency Policy : Performance
  PCI ASPM L1 Link
  Power Management : Disabled

```

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2023.0/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Tue May 2 09:56:23 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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```

14. cpupower frequency-info
15. tuned-adm active
16. systemctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

```

```

-----
1. uname -a
Linux localhost 5.14.21-150400.19-default #1 SMP PREEMPT_DYNAMIC Wed Apr 20 08:32:52 UTC 2022 (d6fb753/lp)
x86_64 x86_64 x86_64 GNU/Linux

```

```

-----
2. w
 09:56:23 up 3 min,  2 users,  load average: 0.31, 0.22, 0.10
USER      TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
root      :        :                09:53   ?xdm?  2:43   0.02s gdm-session-worker [pam/gdm-autologin]
root      :0       :                09:53   ?xdm?  2:43   0.02s /usr/lib/gdm/gdm-x-session
--register-session --run-script gnome

```

```

-----
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) 4126112
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) 4126112
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
/usr/lib/systemd/systemd --user
/usr/lib/gnome-terminal-server
bash
/bin/bash ./DELL_speed.sh
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-speccpu.sh speed --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-LogProcD=1
--define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=2 --output_format csv,html,pdf,txt
/bin/bash ./dell-run-speccpu.sh speed --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define DL-BIOS-LogProcD=1

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```

--define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=2 --output_format csv,html,pdf,txt
runcpu --nobuild --action validate --define default-platform-flags -c
ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=96 --tune base,peak -o all --define
intspeedaffinity --define drop_caches --iterations 2 --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc --define
DL-BIOS-LogProcD=1 --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=2
--output_format csv,html,pdf,txt intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=96 --tune base,peak --output_format all
--define intspeedaffinity --define drop_caches --iterations 2 --define DL-BIOSinc=Dell-BIOS_Xeon-4.inc
--define DL-BIOS-LogProcD=1 --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-BIOS-SNC=2
--output_format csv,html,pdf,txt --nopower --runmode speed --tune base:peak --size refspeed intspeed
--nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.001/temlogs/preenv.intspeed.001.0.log --lognum 001.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-ic2023.0

```

```

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Platinum 8468
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b0001b0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 48
siblings       : 48
2 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-47
physical id 1: core ids 0-47
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
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
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):            96
On-line CPU(s) list: 0-95
Vendor ID:         GenuineIntel
Model name:        Intel(R) Xeon(R) Platinum 8468
CPU family:        6
Model:            143
Thread(s) per core: 1
Core(s) per socket: 48
Socket(s):         2
Stepping:          8
BogoMIPS:          4200.00
Flags:             fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

```
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 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
cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced 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 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
```

```
L1d cache: 4.5 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
L2 cache: 192 MiB (96 instances)
L3 cache: 210 MiB (2 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84,88,92
NUMA node1 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86,90,94
NUMA node2 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93
NUMA node3 CPU(s): 3,7,11,15,19,23,27,31,35,39,43,47,51,55,59,63,67,71,75,79,83,87,91,95
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/swaps 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	4.5M	12	Data	1	64	1	64
L1i	32K	3M	8	Instruction	1	64	1	64
L2	2M	192M	16	Unified	2	2048	1	64
L3	105M	210M	15	Unified	3	114688	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: 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84,88,92
node 0 size: 257494 MB
node 0 free: 247094 MB
node 1 cpus: 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86,90,94
node 1 size: 258007 MB
node 1 free: 257588 MB
node 2 cpus: 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93
node 2 size: 258041 MB
node 2 free: 257745 MB
node 3 cpus: 3,7,11,15,19,23,27,31,35,39,43,47,51,55,59,63,67,71,75,79,83,87,91,95
node 3 size: 258012 MB
node 3 free: 257339 MB
node distances:
node 0 1 2 3
0: 10 12 21 21
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

1: 12 10 21 21
2: 21 21 10 12
3: 21 21 12 10

9. /proc/meminfo
MemTotal: 1056313620 kB

10. who -r
run-level 5 May 2 09:54

11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
Default Target Status
graphical running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor auditd avahi-daemon bluetooth cron display-manager firewalld getty@ haveged irqbalance iscsi issue-generator kbdsettings klog libvirt lvm2-monitor nscd nvme-fc-boot-connections oracle postfix purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny wpa_supplicant xencommons
enabled-runtime	systemd-remount-fs
disabled	NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon amavis apache2 apache2@ appstream-sync-cache autofs autoyast-initscripts avahi-dnsmconfd bgpd blk-availability bluetooth-mesh boot-sysctl booth-arbitrator booth@ ca-certificates chrony-wait chronyd clamav-milter clamd cloud-config cloud-final cloud-init cloud-init-local console-getty containerbuild-regionsrv corosync corosync-notifyd crm_mon cryptctl-client cryptctl-server ctdb cups cups-browsed ddclient debug-shell dhcpcd dhcpcd6 dhcrelay dhcrelay6 dirsrv@ dlm dmraid-activation dnsmasq docker-img-store-setup docker-img-store-setup-xfs drbd drbd-lvchange@ drbd-wait-promotable@ ebttables exchange-bmc-os-info fetchmail freshclam google-guest-agent google-shutdown-scripts google-startup-scripts gpm grub2-once guestregister haveged-switch-root hawk hwloc-dump-hwdata ipmi ipmiev d ipvsadm iscsi-init iscsid iscsiui isid issue-add-ssh-keys kdump kdump-early kexec-load ksm kvm_stat ldirectord libvirt-guests logd lunmask lvmlockd lvmlocks man-db-create mariadb mariadb@ multipathd munge named nfs nfs-blkmap nfs-server nfsserver nm-cloud-setup nmb ntp-wait ntpd nvme-f-autoconnect openvpn@ ospf6d ospfd ostree-remount pacemaker pppoe pppoe-server racoon racoon-setkey radvd rarpd@ rdisc ripd ripngd rootgrow rpcbind rpmconfigcheck rsyncd rtkit-daemon salt-minion sapconf sapperouter saptune sbd sbd_remote serial-getty@ slurmd slurmctld slurmdbd smartd_generate_opts smb snmpd snmptrapd spamd spampd speech-dispatcherd squid srp_daemon srp_daemon_port@ strongswan strongswan-starter svnservice sysstat systemd-boot-check-no-failures systemd-network-generator systemd-nspawn@ systemd-sysext systemd-time-wait-sync systemd-timesyncd tcsh tuned udisks2 upower virtinterfaced virtnetworkd virtnodedevd virtnwfilterd virtproxid virtqemu virtsecret virtstoraged virtxend vsftpd waagent winbind wpa_supplicant@ xen-dom0-modules xen-init-dom0 xen-qemu-dom0-disk-backend xen-watchdog xenconsoled xendomains xenstored xrdp xrdp-sesman ypbind zebra pcsd saned@ uidd virtlockd virtlogd wickedd
indirect	

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.19-default
root=UUID=5dbfa664-5ba7-440a-b916-2ff8d67469f6
splash=silent
mitigations=auto
quiet
security=apparmor

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Platform Notes (Continued)

```

-----
14. cpupower frequency-info
analyzing CPU 0:
  Unable to determine current policy
  boost state support:
    Supported: yes
    Active: yes

```

```

-----
15. tuned-adm active
  No current active profile.

```

```

-----
16. 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                   20
vm.watermark_boost_factor      15000
vm.watermark_scale_factor      10
vm.zone_reclaim_mode           0

```

```

-----
17. /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

```

```

-----
18. /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

```

```

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

```

```

-----
20. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2023.0

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

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

Platform Notes (Continued)

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
tmpfs	tmpfs	70G	4.2G	66G	6%	/mnt/ramdisk

```

21. /sys/devices/virtual/dmi/id
Vendor:      Dell Inc.
Product:     PowerEdge XE8640
Product Family: PowerEdge
Serial:      1234567

```

```

22. 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:
10x 00CE00B300CE M321R8GA0BB0-CQKEG 64 GB 2 rank 4800
6x 00CE069D00CE M321R8GA0BB0-CQKVG 64 GB 2 rank 4800

```

```

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Dell Inc.
BIOS Version:     1.0.0
BIOS Date:        03/23/2023
BIOS Revision:    1.0

```

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
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
=====

```

```

=====
Fortran | 648.exchange2_s(base, peak)
=====

```

```

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.
=====

```



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

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-trans=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-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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
```



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

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.profddata(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.profddata(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
```

605.mcf_s: basepeak = yes

```
625.x264_s: -m64 -std=c11 -Wl,-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:

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_int_base = 14.7

PowerEdge XE8640 (Intel Xeon Platinum 8468)

SPECspeed®2017_int_peak = 15.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Peak Optimization Flags (Continued)

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>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.4.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/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.4.xml>

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.

Tested with SPEC CPU®2017 v1.1.9 on 2023-05-01 21:56:23-0400.

Report generated on 2024-01-29 17:47:00 by CPU2017 PDF formatter v6716.

Originally published on 2023-06-06.