



SPEC CPU®2017 Integer Rate Result

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xFusion

SPECrate®2017_int_base = 1990

FusionServer 2488H V7 (Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = 2030

CPU2017 License: 6488

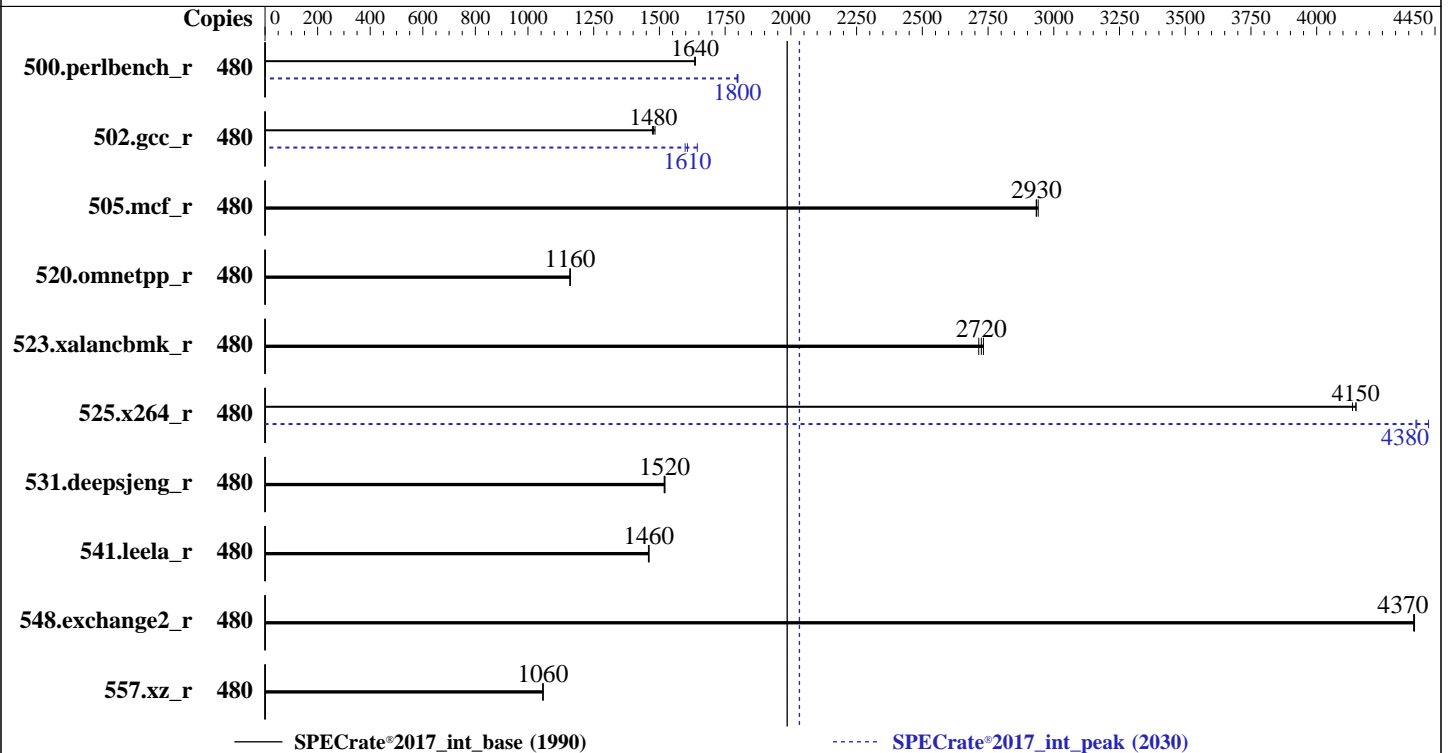
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Jan-2024

Hardware Availability: Jul-2023

Software Availability: Dec-2023



Hardware

CPU Name: Intel Xeon Platinum 8490H
 Max MHz: 3500
 Nominal: 1900
 Enabled: 240 cores, 4 chips, 2 threads/core
 Orderable: 1,2,4 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: 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)
 Storage: 1 x 960 GB SATA SSD
 Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
 5.14.0-70.13.1.el9_0.x86_64
 Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++
 Compiler for Linux;
 Fortran: Version 2023.2.3 of Intel Fortran
 Compiler for Linux;
 Parallel: No
 Firmware: Version 01.02.01.03 Released Jan-2024
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS and OS set to prefer performance at the cost
 of additional power usage



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	480	467	1640	468	1630	467	1640	480	425	1800	426	1800	425	1800
502.gcc_r	480	461	1470	460	1480	458	1480	480	425	1600	413	1640	423	1610
505.mcf_r	480	264	2930	264	2930	264	2940	480	264	2930	264	2930	264	2940
520.omnetpp_r	480	542	1160	543	1160	543	1160	480	542	1160	543	1160	543	1160
523.xalancbmk_r	480	186	2720	187	2710	186	2730	480	186	2720	187	2710	186	2730
525.x264_r	480	203	4140	203	4150	203	4150	480	190	4430	192	4380	192	4380
531.deepsjeng_r	480	362	1520	362	1520	362	1520	480	362	1520	362	1520	362	1520
541.leela_r	480	545	1460	544	1460	544	1460	480	545	1460	544	1460	544	1460
548.exchange2_r	480	288	4370	288	4370	288	4370	480	288	4370	288	4370	288	4370
557.xz_r	480	491	1060	490	1060	490	1060	480	491	1060	490	1060	490	1060

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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"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:

LD_LIBRARY_PATH =

"/home/Uniautos/cpu2017/lib/intel64:/home/Uniautos/cpu2017/lib/ia32:/home/Uniautos/cpu2017/je5.0.1-32"

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

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)

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General Notes (Continued)

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:
Performance Profile Set to Performance
SNC Set to Enable SNC4 (4-clusters)

Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Fri Jan 26 12:31:11 2024

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

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10. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
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21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. uname -a
Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux

2. w
12:31:11 up 5 min, 2 users, load average: 0.52, 5.23, 3.35
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root tty1 12:27 3:51 0.00s 0.00s -bash
root pts/0 12:27 1:03 1.12s 0.00s -bash

3. Username

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Platform Notes (Continued)

From environment variable \$USER: root

```

-----
4. ulimit -a
real-time non-blocking time (microseconds, -R) unlimited
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 4124876
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) 4124876
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@pts/0
-bash
/bin/sh ./test-rate-cpu2017.sh
runcpu --define default-platform-flags --copies 480 -c ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg
--define smt-on --define cores=240 --define physicalfirst --define invoke_with_interleave --define
drop_caches --tune base,peak -o all intrate
runcpu --define default-platform-flags --copies 480 --configfile
ic2023.2.3-lin-sapphirerapids-rate-20231121.cfg --define smt-on --define cores=240 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.002/temlogs/preenv.intrate.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/Uniautos/cpu2017

-----
6. /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8490H
vendor_id : GenuineIntel
cpu family : 6
model : 143
stepping : 6
microcode : 0x2b0004d0
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs
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

```

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Platform Notes (Continued)

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 2.37.4:

```

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
BIOS Vendor ID:         Intel(R) Corporation
Model name:              Intel(R) Xeon(R) Platinum 8490H
BIOS 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:                6
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 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 avx2 smep bmi2 erms
                        invpcid 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_l1d 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):           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

```

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Platform Notes (Continued)

```

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 L1tf:          Not affected
Vulnerability Mds:           Not affected
Vulnerability Meltdown:     Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
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: 63737 MB
node 0 free: 63301 MB
node 1 cpus: 15-29,255-269
node 1 size: 64505 MB
node 1 free: 64186 MB
node 2 cpus: 30-44,270-284
node 2 size: 64505 MB
node 2 free: 64138 MB
node 3 cpus: 45-59,285-299
node 3 size: 64505 MB
node 3 free: 63471 MB
node 4 cpus: 60-74,300-314
node 4 size: 64505 MB
node 4 free: 64191 MB
node 5 cpus: 75-89,315-329
node 5 size: 64505 MB
node 5 free: 64234 MB
node 6 cpus: 90-104,330-344
node 6 size: 64505 MB
node 6 free: 64229 MB
node 7 cpus: 105-119,345-359
node 7 size: 64505 MB
node 7 free: 64191 MB
node 8 cpus: 120-134,360-374
node 8 size: 64505 MB
node 8 free: 64216 MB
node 9 cpus: 135-149,375-389
node 9 size: 64469 MB
node 9 free: 63966 MB
node 10 cpus: 150-164,390-404
node 10 size: 64505 MB
node 10 free: 64221 MB
node 11 cpus: 165-179,405-419

```

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Platform Notes (Continued)

```
node 11 size: 64505 MB
node 11 free: 64208 MB
node 12 cpus: 180-194,420-434
node 12 size: 64505 MB
node 12 free: 64215 MB
node 13 cpus: 195-209,435-449
node 13 size: 64505 MB
node 13 free: 64222 MB
node 14 cpus: 210-224,450-464
node 14 size: 64505 MB
node 14 free: 64223 MB
node 15 cpus: 225-239,465-479
node 15 size: 64476 MB
node 15 free: 63219 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	21	21	21	21
1:	12	10	12	12	21	21	21	21	21	21	21	21	21	21	21	21
2:	12	12	10	12	21	21	21	21	21	21	21	21	21	21	21	21
3:	12	12	12	10	21	21	21	21	21	21	21	21	21	21	21	21
4:	21	21	21	21	10	12	12	12	21	21	21	21	21	21	21	21
5:	21	21	21	21	12	10	12	12	21	21	21	21	21	21	21	21
6:	21	21	21	21	12	12	10	12	21	21	21	21	21	21	21	21
7:	21	21	21	21	12	12	12	10	21	21	21	21	21	21	21	21
8:	21	21	21	21	21	21	21	10	12	12	12	21	21	21	21	21
9:	21	21	21	21	21	21	21	12	10	12	12	21	21	21	21	21
10:	21	21	21	21	21	21	21	12	12	10	12	21	21	21	21	21
11:	21	21	21	21	21	21	21	12	12	12	10	21	21	21	21	21
12:	21	21	21	21	21	21	21	21	21	21	21	10	12	12	12	12
13:	21	21	21	21	21	21	21	21	21	21	21	12	10	12	12	12
14:	21	21	21	21	21	21	21	21	21	21	21	12	12	10	12	12
15:	21	21	21	21	21	21	21	21	21	21	21	12	12	12	12	10

9. /proc/meminfo
MemTotal: 1056006464 kB

10. who -r
run-level 3 Jan 26 12:25

11. Systemd service manager version: systemd 250 (250-6.el9_0)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond dbus-broker firewalld getty@ irqbalance kdump mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sshd sssd systemd-network-generator tuned udisks2
enabled-runtime	systemd-remount-fs
disabled	console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update nftables rdisc rhsm rhsm-facts rpmdm-rebuild serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysex
indirect	sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

13. Linux kernel boot-time arguments, from /proc/cmdline

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Platform Notes (Continued)

```
BOOT_IMAGE=(hd2,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=UUID=fc5aaa98-7763-4e7f-8371-1b1810d17883
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=UUID=62bda881-0d36-43ce-826e-76cb2ea35911
nohz_full=1-479
```

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

```
-----
15. tuned-adm active
  Current active profile: throughput-performance
-----
```

```
-----
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                  40
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                   10
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
-----
```

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Platform Notes (Continued)

```
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 9.0 (Plow)
redhat-release  Red Hat Enterprise Linux release 9.0 (Plow)
system-release  Red Hat Enterprise Linux release 9.0 (Plow)
```

20. Disk information

SPEC is set to: /home/Uniautos/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sdc3 xfs 272G 95G 177G 35% /home

21. /sys/devices/virtual/dmi/id

Vendor: XFUSION
Product: 2488H V7
Product Family: EagleStream

22. dmidecode

Additional information from dmidecode 3.3 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:
18x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800
14x Samsung M321R4GA3BB6-CQKEG 32 GB 2 rank 4800

23. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: XFUSION
BIOS Version: 01.02.01.03
BIOS Date: 01/01/2024

Compiler Version Notes

=====
C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

=====
C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
557.xz_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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=====
C | 502.gcc_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.2.3 Build x
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SPEC CPU®2017 Integer Rate Result

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xFusion

SPECrate®2017_int_base = 1990

FusionServer 2488H V7 (Intel Xeon Platinum 8490H)

SPECrate®2017_int_peak = 2030

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Jan-2024
Hardware Availability: Jul-2023
Software Availability: Dec-2023

Compiler Version Notes (Continued)

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
557.xz_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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C++ | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
541.leela_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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Fortran | 548.exchange2_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
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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



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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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo
```

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo
```

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/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmallo
```

Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Peak Portability Flags

```
500.perlbenc_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
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
```

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Hardware Availability: Jul-2023
Software Availability: Dec-2023

Peak Portability Flags (Continued)

557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc
```

```
502.gcc_r: -m32
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc
```

505.mcf_r: basepeak = yes

```
525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/home/specdev/new_compilers/ic2023.2.3/compiler/lib/intel64_lin
-lqkmalloc
```

557.xz_r: basepeak = yes

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

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Tested by: xFusion

Test Date: Jan-2024

Hardware Availability: Jul-2023

Software Availability: Dec-2023

Peak Optimization Flags (Continued)

Fortran benchmarks:

548.exchange2_r: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-SPR-V1.1-revC.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-SPR-V1.1-revC.xml>

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