Arch Linux Exploration

Rootless Docker setup

Set up `rootless` Docker on Linux (so each user can have their own instance of the Docker daemon running, which provides better container isolation): https://docs.docker.com/engine/security/rootless/
This utilizes Docker contexts, which basically allows for switching the active docker daemon using `docker context`: https://docs.docker.com/engine/context/working-with-contexts/
Make sure to follow https://docs.docker.com/engine/security/rootless/#limiting-resources in order to set up proper Linux cgroup (control group: https://docs.docker.com/config/containers/runmetrics/) resource limiting and `docker stats` tracking!

Zram and Zswap

Looking for all `zram` related files - results of `find / -iregex .*zram.* 2>/dev/null`
(`zram` is basically a zlib compressed, in-RAM storage space that can be used for swap or extra storage space. Look up `zram` on the Arch wiki for more information)

```
/home/rohan/.local/share/docker/overlay2/44f1a6f044052f6b992504d9067770cc74
daaae1555de49041fec1e01e763793/diff/usr/sbin/zramctl
/home/rohan/.local/share/docker/overlay2/44f1a6f044052f6b992504d9067770cc74
daaae1555de49041fec1e01e763793/diff/usr/share/bash-
completion/completions/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/ubuntu12_64
/steam-runtime-sniper/sniper_platform_0.20240307.80401/files/sbin/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/ubuntu12_64
/steam-runtime-sniper/sniper_platform_0.20240307.80401/files/share/bash-
completion/completions/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/ubuntu12_64
/steam-runtime-sniper/var/tmp-B436L2/usr/sbin/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/ubuntu12_64
/steam-runtime-sniper/var/tmp-B436L2/usr/share/bash-
```

```
completion/completions/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/steamapps/c
ommon/SteamLinuxRuntime_sniper/sniper_platform_0.20240307.80401/files/sbin/
zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/steamapps/c
ommon/SteamLinuxRuntime_sniper/sniper_platform_0.20240307.80401/files/share
/bash-completion/completions/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/steamapps/c
ommon/SteamLinuxRuntime_sniper/var/tmp-0GA8L2/usr/sbin/zramctl
/home/rohan/.var/app/com.valvesoftware.Steam/.local/share/Steam/steamapps/c
ommon/SteamLinuxRuntime_sniper/var/tmp-0GA8L2/usr/share/bash-
completion/completions/zramctl
/home/rohan/zram_file_search
/var/cache/pacman/pkg/zram-generator-1.1.2-1-x86_64.pkg.tar.zst
/var/cache/pacman/pkg/zram-generator-1.1.2-1-x86_64.pkg.tar.zst.sig
/var/lib/pacman/local/zram-generator-1.1.2-1
/var/lib/pacman/local/zram-generator-1.1.2-1/mtree
/var/lib/pacman/local/zram-generator-1.1.2-1/desc
/var/lib/pacman/local/zram-generator-1.1.2-1/files
/var/lib/flatpak/runtime/org.freedesktop.Platform/x86_64/23.08/8d036b0bd06a
e893ffab1149b2fa036b8d0a6c3947906de00e6859f681bd16b0/files/bin/zramctl
/var/lib/flatpak/runtime/org.freedesktop.Platform/x86_64/23.08/8d036b0bd06a
e893ffab1149b2fa036b8d0a6c3947906de00e6859f681bd16b0/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/46/b6d2adc1f5a0a7ee49001
20df526a4496449e9a798062b23cbedd28372d6d094/files/bin/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/46/b6d2adc1f5a0a7ee49001
20df526a4496449e9a798062b23cbedd28372d6d094/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/44/03d58bd67a3f2f54f02fb
04cf46543e820d1b4b4c0ceb44271edd4224d3bad2a/files/bin/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/44/03d58bd67a3f2f54f02fb
04cf46543e820d1b4b4c0ceb44271edd4224d3bad2a/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/45/e66d066758b2a7b50a1ca
c032041fc1569c428f7cff988dcba554b3c035a191d/files/bin/zramctl
/var/lib/flatpak/runtime/org.gnome.Platform/x86_64/45/e66d066758b2a7b50a1ca
c032041fc1569c428f7cff988dcba554b3c035a191d/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/runtime/org.kde.Platform/x86_64/6.6/d9a07ad16df6b5858f9240
14ae6bc0803035276bd317da79e4a36bae2f68790b/files/bin/zramctl
/var/lib/flatpak/runtime/org.kde.Platform/x86_64/6.6/d9a07ad16df6b5858f9240
14ae6bc0803035276bd317da79e4a36bae2f68790b/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/runtime/org.freedesktop.Sdk/x86_64/22.08/5e230002750b20fbb
628d1154b95aba1a4ede0c08f36e71cbca19ae6452be500/files/bin/zramctl
/var/lib/flatpak/runtime/org.freedesktop.Sdk/x86_64/22.08/5e230002750b20fbb
628d1154b95aba1a4ede0c08f36e71cbca19ae6452be500/files/share/bash-
completion/completions/zramctl
/var/lib/flatpak/.removed/org.freedesktop.Platform-
a27ac639f80307e4b70c135012b7e2f1e74b17a4bb11b1ae7e15aae7d24f1879/files/bin/
zramctl
/var/lib/flatpak/.removed/org.freedesktop.Platform-
a27ac639f80307e4b70c135012b7e2f1e74b17a4bb11b1ae7e15aae7d24f1879/files/shar
```

```
e/bash-completion/completions/zramctl
/dev/zram0
/run/udev/data/+module:zram
/run/systemd/units/invocation:systemd-zram-setup@zram0.service
/run/systemd/units/invocation:dev-zram0.swap
/run/systemd/generator/systemd-zram-setup@zram0.service.d
/run/systemd/generator/systemd-zram-setup@zram0.service.d/bindings.conf
/run/systemd/generator/dev-zram0.swap
/run/systemd/generator/swap.target.wants/dev-zram0.swap
/etc/systemd/zram-generator.conf
/sys/kernel/btf/zram
/sys/kernel/debug/zram
/sys/kernel/debug/zram/zram0
/sys/kernel/debug/zram/zram0/block_state
/sys/kernel/debug/shrinker/mm-zspool:zram0-43
/sys/kernel/debug/shrinker/mm-zspool:zram0-43/scan
/sys/kernel/debug/shrinker/mm-zspool:zram0-43/count
/sys/kernel/debug/zsmalloc/zram0
/sys/kernel/debug/zsmalloc/zram0/classes
/sys/kernel/debug/block/zram0
/sys/kernel/debug/printk/index/zram
/sys/class/block/zram0
/sys/class/zram-control
/sys/class/zram-control/hot_remove
/sys/class/zram-control/hot_add
/sys/devices/virtual/block/zram0
/sys/devices/virtual/block/zram0/uevent
/sys/devices/virtual/block/zram0/ext_range
/sys/devices/virtual/block/zram0/mm_stat
/sys/devices/virtual/block/zram0/range
/sys/devices/virtual/block/zram0/recompress
/sys/devices/virtual/block/zram0/backing_dev
/sys/devices/virtual/block/zram0/alignment_offset
/sys/devices/virtual/block/zram0/diskseq
/sys/devices/virtual/block/zram0/writeback_limit_enable
/sys/devices/virtual/block/zram0/power
/sys/devices/virtual/block/zram0/power/runtime_active_time
/sys/devices/virtual/block/zram0/power/runtime_status
/sys/devices/virtual/block/zram0/power/autosuspend_delay_ms
/sys/devices/virtual/block/zram0/power/runtime_suspended_time
/sys/devices/virtual/block/zram0/power/control
/sys/devices/virtual/block/zram0/reset
/sys/devices/virtual/block/zram0/mem_limit
/sys/devices/virtual/block/zram0/comp_algorithm
/sys/devices/virtual/block/zram0/dev
/sys/devices/virtual/block/zram0/holders
/sys/devices/virtual/block/zram0/bd_stat
/sys/devices/virtual/block/zram0/ro
/sys/devices/virtual/block/zram0/mem_used_max
/sys/devices/virtual/block/zram0/stat
/sys/devices/virtual/block/zram0/events_poll_msecs
/sys/devices/virtual/block/zram0/writeback
/sys/devices/virtual/block/zram0/writeback_limit
/sys/devices/virtual/block/zram0/events_async
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/sys/devices/virtual/block/zram0/compact
/sys/devices/virtual/block/zram0/queue
/sys/devices/virtual/block/zram0/queue/io_poll_delay
/sys/devices/virtual/block/zram0/queue/max_integrity_segments
/sys/devices/virtual/block/zram0/queue/zoned
/sys/devices/virtual/block/zram0/queue/throttle_sample_time
/sys/devices/virtual/block/zram0/queue/io_poll
/sys/devices/virtual/block/zram0/queue/discard_zeroes_data
/sys/devices/virtual/block/zram0/queue/minimum_io_size
/sys/devices/virtual/block/zram0/queue/nr_zones
/sys/devices/virtual/block/zram0/queue/write_same_max_bytes
/sys/devices/virtual/block/zram0/queue/max_segments
/sys/devices/virtual/block/zram0/queue/dax
/sys/devices/virtual/block/zram0/queue/dma_alignment
/sys/devices/virtual/block/zram0/queue/physical_block_size
/sys/devices/virtual/block/zram0/queue/logical_block_size
/sys/devices/virtual/block/zram0/queue/virt_boundary_mask
/sys/devices/virtual/block/zram0/queue/zone_append_max_bytes
/sys/devices/virtual/block/zram0/queue/write_cache
/sys/devices/virtual/block/zram0/queue/stable_writes
/sys/devices/virtual/block/zram0/queue/max_segment_size
/sys/devices/virtual/block/zram0/queue/rotational
/sys/devices/virtual/block/zram0/queue/discard_max_bytes
/sys/devices/virtual/block/zram0/queue/add_random
/sys/devices/virtual/block/zram0/queue/discard_max_hw_bytes
/sys/devices/virtual/block/zram0/queue/optimal_io_size
/sys/devices/virtual/block/zram0/queue/chunk_sectors
/sys/devices/virtual/block/zram0/queue/read_ahead_kb
/sys/devices/virtual/block/zram0/queue/max_discard_segments
/sys/devices/virtual/block/zram0/queue/write_zeroes_max_bytes
/sys/devices/virtual/block/zram0/queue/nomerges
/sys/devices/virtual/block/zram0/queue/zone_write_granularity
/sys/devices/virtual/block/zram0/queue/fua
/sys/devices/virtual/block/zram0/queue/discard_granularity
/sys/devices/virtual/block/zram0/queue/max_sectors_kb
/sys/devices/virtual/block/zram0/queue/hw_sector_size
/sys/devices/virtual/block/zram0/queue/max_hw_sectors_kb
/sys/devices/virtual/block/zram0/queue/iostats
/sys/devices/virtual/block/zram0/size
/sys/devices/virtual/block/zram0/disksize
/sys/devices/virtual/block/zram0/integrity
/sys/devices/virtual/block/zram0/integrity/write_generate
/sys/devices/virtual/block/zram0/integrity/format
/sys/devices/virtual/block/zram0/integrity/read_verify
/sys/devices/virtual/block/zram0/integrity/tag_size
/sys/devices/virtual/block/zram0/integrity/protection_interval_bytes
/sys/devices/virtual/block/zram0/integrity/device_is_integrity_capable
/sys/devices/virtual/block/zram0/discard_alignment
/sys/devices/virtual/block/zram0/subsystem
/sys/devices/virtual/block/zram0/trace
/sys/devices/virtual/block/zram0/trace/end_lba
/sys/devices/virtual/block/zram0/trace/act_mask
/sys/devices/virtual/block/zram0/trace/start_lba
/sys/devices/virtual/block/zram0/trace/enable
```

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/sys/devices/virtual/block/zram0/trace/pid
/sys/devices/virtual/block/zram0/io_stat
/sys/devices/virtual/block/zram0/max_comp_streams
/sys/devices/virtual/block/zram0/recomp_algorithm
/sys/devices/virtual/block/zram0/capability
/sys/devices/virtual/block/zram0/bdi
/sys/devices/virtual/block/zram0/hidden
/sys/devices/virtual/block/zram0/debug_stat
/sys/devices/virtual/block/zram0/removable
/sys/devices/virtual/block/zram0/idle
/sys/devices/virtual/block/zram0/initstate
/sys/devices/virtual/block/zram0/events
/sys/devices/virtual/block/zram0/inflight
/sys/devices/virtual/block/zram0/slaves
/sys/fs/cgroup/system.slice/dev-zram0.swap
/sys/fs/cgroup/system.slice/dev-zram0.swap/misc.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.latency
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.prio.class
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.pressure
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.cpus.exclusive.effective
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.procs
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.events.local
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.swap.peak
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.swap.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/misc.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.cpus.exclusive
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.swap.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.weight
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.swap.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.max.descendants
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.weight.nice
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.pressure
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/pids.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/pids.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.low
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.pressure
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.type
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.bfq.weight
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.events.local
/sys/fs/cgroup/system.slice/dev-zram0.swap/rdma.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.swap.high
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.low
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.rsvd.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.idle
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.stat.local
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.rsvd.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/rdma.max
```

```
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.threads
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.numa_stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.kill
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.rsvd.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.peak
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.cpus.partition
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.cpus.effective
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.freeze
/sys/fs/cgroup/system.slice/dev-zram0.swap/irq.pressure
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.numa_stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.min
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.max.burst
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.controllers
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.numa_stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.events.local
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.oom.group
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.writeback
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.uclamp.min
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.mems
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.high
/sys/fs/cgroup/system.slice/dev-zram0.swap/pids.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/misc.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.mems.effective
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.subtree_control
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.events
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.1GB.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.rsvd.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.weight
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpuset.cpus
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.reclaim
/sys/fs/cgroup/system.slice/dev-zram0.swap/pids.peak
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.max.depth
/sys/fs/cgroup/system.slice/dev-zram0.swap/cgroup.pressure
/sys/fs/cgroup/system.slice/dev-zram0.swap/io.stat
/sys/fs/cgroup/system.slice/dev-zram0.swap/cpu.uclamp.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/hugetlb.2MB.max
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/misc.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/io.latency
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/io.prio.class
```

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/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/io.pressure
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.cpus.exclusive.effective
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.procs
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.events.local
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.swap.peak
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.swap.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/misc.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.cpus.exclusive
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.swap.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.weight
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.swap.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.max.descendants
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/cpu.stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.weight.nice
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.pressure
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/pids.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/pids.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.low
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.pressure
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.type
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/io.bfq.weight
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.events.local
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/rdma.current
/sys/fs/cgroup/system.slice/system-
```

```
systemd\x2dzram\x2dsetup.slice/memory.swap.high
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/io.low
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.rsvd.max
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/cpu.idle
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.stat.local
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.rsvd.current
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/rdma.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.threads
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.numa_stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.kill
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.rsvd.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.peak
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.cpus.partition
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.cpus.effective
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.freeze
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/irq.pressure
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.numa_stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.min
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.max.burst
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.controllers
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/cpu.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.numa_stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.events.local
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.oom.group
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.max
/sys/fs/cgroup/system.slice/system-
```

```
systemd\x2dzram\x2dsetup.slice/cpu.uclamp.min
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.mems
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.high
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/pids.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/misc.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.mems.effective
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.subtree_control
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/io.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.events
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.1GB.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.rsvd.current
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/io.weight
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpuset.cpus
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.reclaim
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/pids.peak
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.max.depth
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cgroup.pressure
/sys/fs/cgroup/system.slice/system-systemd\x2dzram\x2dsetup.slice/io.stat
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/cpu.uclamp.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/hugetlb.2MB.max
/sys/block/zram0
/sys/module/zram
/sys/module/zram/initsize
/sys/module/zram/uevent
/sys/module/zram/notes
/sys/module/zram/notes/.note.Linux
/sys/module/zram/notes/.note.gnu.build-id
/sys/module/zram/notes/.note.gnu.property
/sys/module/zram/taint
/sys/module/zram/srcversion
/sys/module/zram/holders
/sys/module/zram/refcnt
/sys/module/zram/coresize
/sys/module/zram/initstate
/sys/module/zram/sections
/sys/module/zram/sections/__patchable_function_entries
/sys/module/zram/sections/.orc_unwind
/sys/module/zram/sections/__param
/sys/module/zram/sections/.ibt_endbr_seal
```

```
/sys/module/zram/sections/.printk_index
/sys/module/zram/sections/.note.Linux
/sys/module/zram/sections/.static_call_sites
/sys/module/zram/sections/.strtab
/sys/module/zram/sections/__mcount_loc
/sys/module/zram/sections/.exit.text
/sys/module/zram/sections/.exit.data
/sys/module/zram/sections/.bss
/sys/module/zram/sections/.orc_unwind_ip
/sys/module/zram/sections/.return_sites
/sys/module/zram/sections/.gnu.linkonce.this_module
/sys/module/zram/sections/.symtab
/sys/module/zram/sections/.rodata
/sys/module/zram/sections/.init.text
/sys/module/zram/sections/.note.gnu.build-id
/sys/module/zram/sections/.text
/sys/module/zram/sections/.init.data
/sys/module/zram/sections/.call_sites
/sys/module/zram/sections/.data
/sys/module/zram/sections/.smp_locks
/sys/module/zram/sections/__bug_table
/sys/module/zram/sections/.rodata.str1.1
/sys/module/zram/sections/.note.gnu.property
/sys/module/zram/sections/.orc_header
/sys/module/zram/sections/.rodata.str1.8
/usr/share/licenses/zram-generator
/usr/share/licenses/zram-generator/LICENSE
/usr/share/man/man5/zram-generator.conf.5.gz
/usr/share/man/man8/zramctl.8.gz
/usr/share/man/man8/zram-generator.8.gz
/usr/share/doc/zram-generator
/usr/share/doc/zram-generator/zram-generator.conf.example
/usr/share/bash-completion/completions/zramctl
/usr/bin/zramctl
/usr/lib/systemd/system/systemd-zram-setup@.service
/usr/lib/systemd/system-generators/zram-generator
/usr/lib/modules/6.8.4-arch1-1/kernel/drivers/block/zram
/usr/lib/modules/6.8.4-arch1-1/kernel/drivers/block/zram/zram.ko.zst
/usr/lib/modules/6.8.4-arch1-1/build/drivers/block/zram
/usr/lib/modules/6.8.4-arch1-1/build/drivers/block/zram/Kconfig
```

Also looking for `zswap` files (look it up on the Arch wiki...) in a similar way to configure that:

```
/sys/fs/cgroup/sys-fs-fuse-connections.mount/memory.zswap.current
/sys/fs/cgroup/sys-fs-fuse-connections.mount/memory.zswap.writeback
/sys/fs/cgroup/sys-fs-fuse-connections.mount/memory.zswap.max
/sys/fs/cgroup/sys-kernel-config.mount/memory.zswap.current
/sys/fs/cgroup/sys-kernel-config.mount/memory.zswap.writeback
/sys/fs/cgroup/sys-kernel-config.mount/memory.zswap.max
/sys/fs/cgroup/sys-kernel-debug.mount/memory.zswap.current
/sys/fs/cgroup/sys-kernel-debug.mount/memory.zswap.writeback
/sys/fs/cgroup/sys-kernel-debug.mount/memory.zswap.max
```

```
/sys/fs/cgroup/dev-mqueue.mount/memory.zswap.current
/sys/fs/cgroup/dev-mqueue.mount/memory.zswap.writeback
/sys/fs/cgroup/dev-mqueue.mount/memory.zswap.max
/sys/fs/cgroup/user.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-permission-
store.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-permission-
store.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-permission-
store.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/dbus-
broker.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/dbus-
broker.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/dbus-
broker.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-document-
portal.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-document-
portal.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-document-
portal.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-desktop-
portal.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-desktop-
portal.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/xdg-desktop-
portal.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
ksmserver.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
ksmserver.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
ksmserver.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire-
```

```
pulse.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire-
pulse.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire-
pulse.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kwin_wayland.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kwin_wayland.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kwin_wayland.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/wireplumber.service/memory.zswap
.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/wireplumber.service/memory.zswap
.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/wireplumber.service/memory.zswap
.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kded6.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kded6.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-
kded6.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-xdg-desktop-portal-
kde.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-xdg-desktop-portal-
kde.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/plasma-xdg-desktop-portal-
kde.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/at-spi-dbus-
bus.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/at-spi-dbus-
bus.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/at-spi-dbus-
bus.service/memory.zswap.max
```

```
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire.service/memory.zswap.cu
rrent
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire.service/memory.zswap.wr
iteback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/session.slice/pipewire.service/memory.zswap.ma
x
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
kactivitymanagerd.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
kactivitymanagerd.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
kactivitymanagerd.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-polkit-
agent.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-polkit-
agent.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-polkit-
agent.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
xembedsniproxy.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
xembedsniproxy.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
xembedsniproxy.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
ksystemstats.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
ksystemstats.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
ksystemstats.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
baloorunner.service/memory.zswap.current
```

```
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
baloorunner.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
baloorunner.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
gmenudbusmenuproxy.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
gmenudbusmenuproxy.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
gmenudbusmenuproxy.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
krunner.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
krunner.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
krunner.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
powerdevil.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
powerdevil.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/plasma-
powerdevil.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/kde-
baloo.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/kde-
baloo.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/background.slice/kde-
baloo.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
0d87b50f14a904e7129eba1dd65ec83488d4e74b9349fc01dbdf808c7f532f03.scope/memo
ry.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
```

```
0d87b50f14a904e7129eba1dd65ec83488d4e74b9349fc01dbdf808c7f532f03.scope/memo
ry.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
0d87b50f14a904e7129eba1dd65ec83488d4e74b9349fc01dbdf808c7f532f03.scope/memo
ry.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
fad9e7fda659446a395e26afe8c3fa62600c75760588f7c4f4662fc5ec53a766.scope/memo
ry.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
fad9e7fda659446a395e26afe8c3fa62600c75760588f7c4f4662fc5ec53a766.scope/memo
ry.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/docker-
fad9e7fda659446a395e26afe8c3fa62600c75760588f7c4f4662fc5ec53a766.scope/memo
ry.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/user.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250211.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250211.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250211.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.plasma\x2dsystemmonitor-
ee71bda014c045d0a906997e9c95e989.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.plasma\x2dsystemmonitor-
ee71bda014c045d0a906997e9c95e989.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.plasma\x2dsystemmonitor-
ee71bda014c045d0a906997e9c95e989.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.gnome.Geary.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.gnome.Geary.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.gnome.Geary.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-f69f45e747414d8e854bac8a34d37993.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-f69f45e747414d8e854bac8a34d37993.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-f69f45e747414d8e854bac8a34d37993.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Akonadi.Control.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Akonadi.Control.slice/memory.zswap.writebac
k
```

```
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Akonadi.Control.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.68\x2dorg.a11y.atspi.Registry.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.68\x2dorg.a11y.atspi.Registry.slice/dbus-:1.68-
org.a11y.atspi.Registry@0.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.68\x2dorg.a11y.atspi.Registry.slice/dbus-:1.68-
org.a11y.atspi.Registry@0.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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org.a11y.atspi.Registry@0.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.68\x2dorg.a11y.atspi.Registry.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-440869.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-440869.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-440869.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-1f87c55e99614844beac40cc17b058cf.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-
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org.kde.dolphin-1f87c55e99614844beac40cc17b058cf.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.discover.notifier@autostart.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.discover.notifier@autostart.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.discover.notifier@autostart.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
plasmashell-ec46b7633214481395ea58a7e4de020e.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250552.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250552.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.valvesoftware.Steam-3250552.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/docker.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/docker.service/memory.zswap.writebac
```

```
k
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/docker.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37773.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37773.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37773.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
kaccess@autostart.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
kaccess@autostart.service/memory.zswap.max
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dbus\x2d:1.4\x2dorg.kde.kdeconnect.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kdeconnect.slice/dbus-:1.4-
org.kde.kdeconnect@0.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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org.kde.kdeconnect@0.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kdeconnect.slice/dbus-:1.4-
org.kde.kdeconnect@0.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kdeconnect.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
geoclue\x2ddemo\x2dagent@autostart.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
geoclue\x2ddemo\x2dagent@autostart.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.KSplash.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.KSplash.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.KSplash.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.spectacle.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.spectacle.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.spectacle.service/memory.zswap.max
```

```
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-c23a7ac7f43c430596adeb145ae4fcfb.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-
c23a7ac7f43c430596adeb145ae4fcfb.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-c23a7ac7f43c430596adeb145ae4fcfb.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-6d19521e44de48fd81e0e4dc789ca5be.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-6d19521e44de48fd81e0e4dc789ca5be.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-6d19521e44de48fd81e0e4dc789ca5be.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/dconf.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/dconf.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/dconf.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-29ff91028cb74612b320c9077a516ab7.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-29ff91028cb74612b320c9077a516ab7.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kate-29ff91028cb74612b320c9077a516ab7.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
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/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/dbus.socket/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
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/sys/fs/cgroup/user.slice/user-
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registry.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/evolution-source-
registry.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/evolution-source-
registry.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/flatpak-session-
helper.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
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helper.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/flatpak-session-
helper.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-a937c181162347939f9da239806d3f4f.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-a937c181162347939f9da239806d3f4f.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
```

```
firefox-a937c181162347939f9da239806d3f4f.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Notifications.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Notifications.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.freedesktop.Notifications.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/flatpak-
portal.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/flatpak-
portal.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/flatpak-
portal.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
electron28-34bf7446c22a4b0588f5b349a3bf2b3b.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
electron28-34bf7446c22a4b0588f5b349a3bf2b3b.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
systemsettings-
e1c4d71a7f0b4bb3b680a3f7466122fc.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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\x2fhome\x2frohan\x2fPostman\x2fPostman-
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\x2fhome\x2frohan\x2fPostman\x2fPostman-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
\x2fhome\x2frohan\x2fPostman\x2fPostman-
2c580b13d77649418a5bcc36d7d843fa.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-9cc9d60911194d12994a01908360fd5c.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-
9cc9d60911194d12994a01908360fd5c.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.dolphin-9cc9d60911194d12994a01908360fd5c.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dolphin-b56ee24a7ca148ac888b42ec05af508a.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dolphin-b56ee24a7ca148ac888b42ec05af508a.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-06d101eeedfd4ca899d46f335cafcba1.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
```

```
firefox-06d101eeedfd4ca899d46f335cafcba1.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
firefox-06d101eeedfd4ca899d46f335cafcba1.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.LogoutPrompt.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.LogoutPrompt.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.LogoutPrompt.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.xfce.Xfconf.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.xfce.Xfconf.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.xfce.Xfconf.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/gpg-
agent.service/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/gpg-
agent.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/gpg-
agent.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-706096.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-706096.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.usebottles.bottles-706096.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kwalletmanager5.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kwalletmanager5.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.kwalletmanager5.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kmail2-72b8049b9b304253b1cbb3a8badae922.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kmail2-
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/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
org.kde.kmail2-72b8049b9b304253b1cbb3a8badae922.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/app.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.fontinst.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.fontinst.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
dbus\x2d:1.4\x2dorg.kde.fontinst.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37799.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37799.scope/memory.zswap.writeback
```

```
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-dev.vencord.Vesktop-37799.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.raggesilver.BlackBox-403798.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.raggesilver.BlackBox-403798.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/user@1000.service/app.slice/app-
flatpak-com.raggesilver.BlackBox-403798.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/init.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/init.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/init.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-
1000.slice/user@1000.service/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/session-
2.scope/memory.zswap.current
/sys/fs/cgroup/user.slice/user-1000.slice/session-
2.scope/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/session-2.scope/memory.zswap.max
/sys/fs/cgroup/user.slice/user-1000.slice/memory.zswap.writeback
/sys/fs/cgroup/user.slice/user-1000.slice/memory.zswap.max
/sys/fs/cgroup/user.slice/memory.zswap.max
/sys/fs/cgroup/sys-kernel-tracing.mount/memory.zswap.current
/sys/fs/cgroup/sys-kernel-tracing.mount/memory.zswap.writeback
/sys/fs/cgroup/sys-kernel-tracing.mount/memory.zswap.max
/sys/fs/cgroup/init.scope/memory.zswap.current
/sys/fs/cgroup/init.scope/memory.zswap.writeback
/sys/fs/cgroup/init.scope/memory.zswap.max
/sys/fs/cgroup/system.slice/var-log.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/var-log.mount/memory.zswap.writeback
/sys/fs/cgroup/system.slice/var-log.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/containerd.service/memory.zswap.current
/sys/fs/cgroup/system.slice/containerd.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/containerd.service/memory.zswap.max
/sys/fs/cgroup/system.slice/systemd-udevd.service/memory.zswap.current
/sys/fs/cgroup/system.slice/systemd-udevd.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/systemd-udevd.service/memory.zswap.max
/sys/fs/cgroup/system.slice/dbus-broker.service/memory.zswap.current
/sys/fs/cgroup/system.slice/dbus-broker.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/dbus-broker.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
drkonqi\x2dcoredump\x2dprocessor.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
drkonqi\x2dcoredump\x2dprocessor.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
drkonqi\x2dcoredump\x2dprocessor.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-gpg\x2dagent.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent.slice/memory.zswap.writeback
```

```
/sys/fs/cgroup/system.slice/system-gpg\x2dagent.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/boot.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/boot.mount/memory.zswap.writeback
/sys/fs/cgroup/system.slice/boot.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/polkit.service/memory.zswap.current
/sys/fs/cgroup/system.slice/polkit.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/polkit.service/memory.zswap.max
/sys/fs/cgroup/system.slice/rtkit-daemon.service/memory.zswap.current
/sys/fs/cgroup/system.slice/rtkit-daemon.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/rtkit-daemon.service/memory.zswap.max
/sys/fs/cgroup/system.slice/\x2esnapshots.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/\x2esnapshots.mount/memory.zswap.writeback
/sys/fs/cgroup/system.slice/\x2esnapshots.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/home.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/home.mount/memory.zswap.writeback
/sys/fs/cgroup/system.slice/home.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/accounts-daemon.service/memory.zswap.current
/sys/fs/cgroup/system.slice/accounts-daemon.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/accounts-daemon.service/memory.zswap.max
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.current
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.writeback
/sys/fs/cgroup/system.slice/dev-zram0.swap/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
systemd\x2dzram\x2dsetup.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/passim.service/memory.zswap.current
/sys/fs/cgroup/system.slice/passim.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/passim.service/memory.zswap.max
/sys/fs/cgroup/system.slice/wpa_supplicant.service/memory.zswap.current
/sys/fs/cgroup/system.slice/wpa_supplicant.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/wpa_supplicant.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-modprobe.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-modprobe.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-modprobe.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.backlighthelper.slice/memory.zswap.curre
nt
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.backlighthelper.slice/memory.zswap.write
back
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.backlighthelper.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/systemd-journald.service/memory.zswap.current
/sys/fs/cgroup/system.slice/systemd-journald.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/systemd-journald.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.chargethresholdhelper.slice/memory.zswap
.current
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.chargethresholdhelper.slice/memory.zswap
```

```
.writeback
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.chargethresholdhelper.slice/memory.zswap
.max
/sys/fs/cgroup/system.slice/fwupd.service/memory.zswap.current
/sys/fs/cgroup/system.slice/fwupd.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/fwupd.service/memory.zswap.max
/sys/fs/cgroup/system.slice/NetworkManager.service/memory.zswap.current
/sys/fs/cgroup/system.slice/NetworkManager.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/NetworkManager.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
systemd\x2dcoredump.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
systemd\x2dcoredump.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
systemd\x2dcoredump.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/flatpak-system-
helper.service/memory.zswap.current
/sys/fs/cgroup/system.slice/flatpak-system-
helper.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/flatpak-system-helper.service/memory.zswap.max
/sys/fs/cgroup/system.slice/tmp.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/tmp.mount/memory.zswap.writeback
/sys/fs/cgroup/system.slice/tmp.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/systemd-userdbd.service/memory.zswap.current
/sys/fs/cgroup/system.slice/systemd-userdbd.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/systemd-userdbd.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.discretegpuhelper.slice/memory.zswap.cur
rent
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.discretegpuhelper.slice/memory.zswap.wri
teback
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.powerdevil.discretegpuhelper.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-dirmngr.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-dirmngr.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-dirmngr.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kded.smart.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kded.smart.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kded.smart.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/upower.service/memory.zswap.current
/sys/fs/cgroup/system.slice/upower.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/upower.service/memory.zswap.max
/sys/fs/cgroup/system.slice/sddm.service/memory.zswap.current
/sys/fs/cgroup/system.slice/sddm.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/sddm.service/memory.zswap.max
/sys/fs/cgroup/system.slice/var-cache-pacman-pkg.mount/memory.zswap.current
/sys/fs/cgroup/system.slice/var-cache-pacman-
pkg.mount/memory.zswap.writeback
```

```
/sys/fs/cgroup/system.slice/var-cache-pacman-pkg.mount/memory.zswap.max
/sys/fs/cgroup/system.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kinfocenter.dmidecode.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kinfocenter.dmidecode.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
dbus\x2d:1.2\x2dorg.kde.kinfocenter.dmidecode.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/udisks2.service/memory.zswap.current
/sys/fs/cgroup/system.slice/udisks2.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/udisks2.service/memory.zswap.max
/sys/fs/cgroup/system.slice/systemd-timesyncd.service/memory.zswap.current
/sys/fs/cgroup/system.slice/systemd-
timesyncd.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/systemd-timesyncd.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dbrowser.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dbrowser.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dbrowser.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-getty.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-getty.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-getty.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dextra.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dextra.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dextra.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/system-keyboxd.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-keyboxd.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-keyboxd.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/avahi-daemon.service/memory.zswap.current
/sys/fs/cgroup/system.slice/avahi-daemon.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/avahi-daemon.service/memory.zswap.max
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dssh.slice/memory.zswap.current
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dssh.slice/memory.zswap.writeback
/sys/fs/cgroup/system.slice/system-
gpg\x2dagent\x2dssh.slice/memory.zswap.max
/sys/fs/cgroup/system.slice/systemd-logind.service/memory.zswap.current
/sys/fs/cgroup/system.slice/systemd-logind.service/memory.zswap.writeback
/sys/fs/cgroup/system.slice/systemd-logind.service/memory.zswap.max
/sys/fs/cgroup/proc-sys-fs-binfmt_misc.mount/memory.zswap.current
/sys/fs/cgroup/proc-sys-fs-binfmt_misc.mount/memory.zswap.writeback
/sys/fs/cgroup/proc-sys-fs-binfmt_misc.mount/memory.zswap.max
/sys/fs/cgroup/memory.zswap.writeback
/sys/fs/cgroup/dev-hugepages.mount/memory.zswap.current
/sys/fs/cgroup/dev-hugepages.mount/memory.zswap.writeback
/sys/fs/cgroup/dev-hugepages.mount/memory.zswap.max
/sys/module/zswap
/sys/module/zswap/uevent
```

```
/sys/module/zswap/parameters
/sys/module/zswap/parameters/same_filled_pages_enabled
/sys/module/zswap/parameters/enabled
/sys/module/zswap/parameters/shrinker_enabled
/sys/module/zswap/parameters/max_pool_percent
/sys/module/zswap/parameters/compressor
/sys/module/zswap/parameters/non_same_filled_pages_enabled
/sys/module/zswap/parameters/zpool
/sys/module/zswap/parameters/exclusive_loads
/sys/module/zswap/parameters/accept_threshold_percent
/usr/lib/modules/6.8.4-arch1-1/build/include/linux/zswap.h
```

However, looking at the `/proc/cmdline` file on my system, the `zswap` feature seems to be disabled with the `zswap.enabled=0` kernel parameter...

zram configuration file: `/etc/systemd/zram-generator.conf`
This is the configuration file used whenever the `systemd-zram-setup@zram0` systemd service is invoked during startup to create the `/dev/zram0` swap device.

Linux swappiness

`vm.swappiness` kernel parameter delegates between prioritizing freeing up anonymous (stack/heap) memory or file pages from RAM! https://www.howtogeek.com/449691/what-is-swapiness-on-linux-and-how-to-change-it/
Set the `sysctl.vm.swappiness` value in the bootloader config to change it! Value of 100 completely balances the priority
Virtual file system (VFS): https://www.usenix.org/legacy/publications/library/proceedings/usenix01/full_papers/kroeger/kroeger_html/node8.html Linux swap: https://wiki.archlinux.org/title/swap

Disk partitioning and memory swap setup

Linux filesystem type uuid in GPT (partition table scheme that's better than MBR):
`0FC63DAF-8483-4772-8E79-3D69D8477DE4`

Result of running `fdisk -l /dev/nvme0n1` on my system:

```
Disk /dev/nvme0n1: 1.82 TiB, 2000398934016 bytes, 3907029168 sectors
Disk model: Samsung SSD 990 PRO with Heatsink 2TB
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 98B655AF-F448-42E0-95A7-EFB7568C9B62

Device           Start        End    Sectors  Size Type
/dev/nvme0n1p1    2048    1050623    1048576  512M EFI System
/dev/nvme0n1p2 1050624 3907026943 3905976320  1.8T Linux filesystem
```

New storage partition endpoint: 3222276096 (each sector is 512 bytes, and 512 * value = 1.5 TiB (1.5 * 1024^4 bytes))

swap partition type: `0657FD6D-A4AB-43C4-84E5-0933C84B4F4F` (type 19 in GPT paroitition scheme with fdisk)

`lsblk` - for listing block devices
`blkid` - to listing block device id's `fdisk -l` - for inpecting disks and parititions, and `fdisk <dev>` for partitioning disks parted - another interface for parititoning disks (though fdisk is better since it doesn't immediately write changes to the disk)
`cryptsetup` - utility for working with LUKS-encrypted partitions `mkswap` - utility for creating swap file system (assigns new UUID to device, and can assign labels! See Arch wiki page for"persistent dblock device naming")

New /dev/nvme0n1p3 swap partition:
UUID=`364f2c1a-e241-425b-ac75-b96a4f6a3ea7`
PARTUUID=`364f2c1a-e241-425b-ac75-b96a4f6a3ea7`
LABEL=`SWAP`
Can also find all these persistent name mappings under `/dev/disk/by-*` with a bunch of symlinks!
See: https://wiki.archlinux.org/title/persistent_block_device_naming

PROCEDURE FOR MOUNTING A SWAP PARTITION:
FIRST CREATE A PARTITION using `fdisk <disk>` WITH THE "Linux swap" filesystem type (nothing too special about it...)
THEN

```
$ sudo mkswap /dev/<disk>
$ sudo swapon --label=LABEL /dev/<disk>
```

THEN FINALLY ADD A NEW ENTRY TO `/etc/fstab` AS FOLLOWS:

```
LABEL=LABEL none  swap  defaults,pri=<number> 0 0
```

YOU CAN DISABLE/UNMOUNT THE SWAP PARTITION USING `swapoff`

TO CREATE A SWAP FILE IN BTRFS, EXECUTE THE FOLLOWING

```
$ sudo truncate -s 0 /swapfile # Create empty file at root
$ sudo chattr +C /swapfile # No Copy-on-Write (COW) permission, e.g. for
subvolume snapshots
$ sudo chmod 0600 /swapfile # Set permissions
$ sudo fallocate -l <size> /swapfile # Set swapfile size
$ sudo mkswap /swapfile # Create the proper swapfile type
$ sudo swapon /swapfile # Mount the swapfile
```

THEN TO MAKE IT MOUNT AFTER REBOOT, ADD THE FOLLOWING TO the end of `/etc/fstab` (columns separated by tabs)

```
/swapfile none  swap  defaults,pri=100  0 0
```

TO DISABLE THE SWAPFILE, USE `swapoff`
USE `swapon -s` or `free -h` to display swap usage stats!

Setting up hibernation in Arch

Finally, to use this swapfile (or any swap partition) for hibernating

- First get the btrfs disk offset for swap files using

  ```
  $ btrfs inspect-internal map-swapfile -r /swapfile # See btrfs online docs for more info
  ```

  Then write this offset using `echo <offset> | sudo tee /sys/power/resume_offset`
- Then add the following as kernel parameters to the `/boot/loader/entries/*.conf` boot config file at the end of the `options` line (which is how to configure *any* kernel parameters)

  ```
  resume=/dev/<device> resume_offset=<offset>
  ```

  NOTE: resume_offset is NOT REQUIRED for swap partitions (just set the `resume` option to partition device, e.g. `/dev/nvme0n1p3`)
  NOTE: for swap files, `resume` contains the block device (under `/dev`) for the file system containing the swap file
- You also MUST add the `resume` hook to the HOOKS listing in the `/etc/mkinitcpio.conf` initramfs image config file (which is pretty much just like a Dockerfile for initramfs/early user space images -- also, as aside, `cpio` is a compression scheme). Then rebuild the initramfs image(s) using `sudo mkinitcpio -P`
- FINALLY, to hibernate immediately by shutting down and commit the kernel changes, write the swap file root filesystem (or swap partition) device location to `/sys/power/resume` by invoking the following:
  For example, in btrfs, the root filesystem device for a LUKS encrypted partition is given by `/dev/mapper/root`

  ```
  $ echo /dev/<device> | sudo tee /sys/power/resume
  $ echo shutdown | sudo tee /sys/power/disk
  $ echo disk | sudo tee /sys/power/state
  ```

- You can also modify the /etc/systemd/sleep.conf config file and invoke hibernation (in a safer way) using

  ```
  $ sudo systemctl hibernate
  ```

  See https://wiki.archlinux.org/title/Power_management/Suspend_and_hibernate and https://man.archlinux.org/man/systemd-sleep.8 for full details

`dmidecode --type 17` -- list memory (RAM) specs

`/usr/lib/initcpio/` -> contains `initramfs` hook run and build scripts!! This is how disk decryption occcurs using the `encrypt` hook!
`/etc/mkinitcpio.conf` -> specifies the resources included in the `initramfs` file which is mounted as an early user space tmpfs/ramfs type filesystem in RAM so the necessary setup steps can occur, such as decrypting the disk and resuming from the hibernation image!

Kernel parameters and Disk/filesystem stats

Kernel parameters: https://wiki.archlinux.org/title/Kernel_parameters
Hot-loadable Kernel modules: https://wiki.archlinux.org/title/Kernel_module
`sysctl` - set and probe kernel parameters
`systemctl (for systemd)` - manage system services/daemons launched during `init` late in the boot process, when the main userspace is spawned
`modprobe` - hotload and probe kernel modules (such as zram/zswap) while the systerm is running

`filefrag` - list fragmentation status and diswk offset of a given file
`btrfs` - utility for creating and managing btrfs-formatted file systems
`dmsetup` - Linux utility for creating and managing logical block devices that can fuse multiple physical volumes together! Underlies the LVM technology! Kernel feature known as "disk mapping". Pretty darn cool! Used for secure encrypted disk I/O using the Linux kernel's Crypto API too!
Learn more: https://man7.org/linux/man-pages/man8/dmsetup.8.html
Think of disk mapping as making a block device that communicates with (multiple) other devices, while also possibly encrypting/decrypting data! For axample, you can make a linear mapping to two other drives that appear under one block device interface! Really neat! Use `dmsetup` to query about the status of the virtual block devices created that map to other storage devices!

Block/character special files

Block and character special *device* files can be created using `mknod` and are special buffered (block) or unbuffered (character) interfaces to physical devices, which are interfaced with using device drivers loaded in by the kernel, with the device files created under `/dev` by `udev` and attached during boot to the correct drivers according to the device's major number! Every device file has a major (which designates the device type) and minor (which deignates different devices under the same major number/driver) number, which can be used to uniquely identify the device (e.g., 259:2 for /dev/nvme0n1p2)! See https://www.kernel.org/doc/Documentation/admin-guide/devices.txt for an exhuastive device numbers reference. `ls -l` can be used to obtain device types and numbers, for example:

```
crw-rw----+ 1 root video 226, 1 Apr 15 06:39 /dev/dri/card1
```

The first character in the first column indicates character (c) or block (b) special The comma separated values represent the major:minor numbers (e.g. 226:1 for the device above, which designates rendering infrastructure) `udev` is the main daemon for handling device events, and `udevadm` is the utility for interfacing with `udev` https://man7.org/linux/man-pages/man7/udev.7.html
All `/devices/**` paths returned by `udevadm info /dev/<dev>` for some device are under the `/sys/` sysfs Linux interface! The `/sys/devices` path contains configured parameters for different devices (like all kernel paramters are under `/sys/kernel` with a different file for each ending parameter the intermediary values being directories, e.g. `net.io.speed` is stored in `/sys/kernel/net/io/speed`). Use `udefadm info -a` to traverse the parameter tree for a given device. Device rule files are located under `/lib/udev` among other locations...
NOTE: `/dev/nvme0` is the NVMe *memory controller* that communicates over PCIem while `/dev/nvme0n1` is the actual NVMe drive! Then `/dev/nvme0n1p<n>` is the n'th partition!

Disk encryption

`cryptsetup` - used to encrypt/decrypt LUKS devices using the kernel feature, and invokes `dmsetup` to create the necessary logical (virtual) block device mapping under `/dev/mapper` to the decrypted disk volume, so that data is encrypted/decrypted while *passing through* the block device as handled (and buffered) by the configured Linux kernel driver! This means that the disk is never actually fully decrypted and exposed, but rather the virtual mapping is made so the disk is accessible and encryption/decryption of data is done on the fly using the Linux kernel's Crypto API as the user reads and write to the disk! Learn more: https://man7.org/linux/man-pages/man8/cryptsetup.8.html, https://en.wikipedia.org/wiki/Device_mapper
Think of `cryptsetup` as LUKS functionality for the `dmutil` "crypt" target (aka dm-crypt)! Use `cryptsetup` to get information about the *still encrypted* volume device, and `dmutil` to get information about the virtual block device! `cryptsetup` encrypts the drives themselves, allows for creating the password, specifies the proper crypt target and table spec for creating the block device with `dmsetup`, etc., while `dmutil` just provides a virtual device interface for communicating with the encrypted volume in a secure way according the the encryption method.

NOTE: Device files *don't* actually take up space on the system! They are like named pipes, just there to interface with the physical/virtual devices!

Something interesting:
Try to create the virtual block device mapping from the encrypted `/dev/nvme0n1p2` partition device (using `cryptsetup open /dev/nvme0n1p2 root`), which will create the mapping on `/dev/mapper/root`, which is symlinked to the actual `/dev/dm-0` virtual block device file. Then use `dmsetup table /dev/mapper/root` to get the following output:

```
0 3221192705 crypt aes-xts-plain64 :64:logon:cryptsetup:8c018527-ba92-43eb-
9b1d-8508ec7c43d5-d0 0 259:2 32768
```

The second value minus the first gives the number of sectors writable on the block device, starting from volume sector 32768, in the count of 512 byte sectors. Hence multiplying the difference by 512 gives the total

number of writable bytes on the volume. Now, use `btrfs inspect-internal dump-super /dev/mapper/root` top get the following output of the device's *superblock* (basically the main filesystem header -- learn more: https://archive.kernel.org/oldwiki/btrfs.wiki.kernel.org/index.php/On-disk_Format.html):

```
superblock: bytenr=65536, device=/dev/mapper/root
---------------------------------------------------------
csum_type               0 (crc32c)
csum_size               4
csum                    0x3cfa606c [match]
bytenr                  65536
flags                   0x1
                        ( WRITTEN )
magic                   _BHRfS_M [match]
fsid                    c754e01e-710e-413d-bdc3-307abb4545c6
metadata_uuid           00000000-0000-0000-0000-000000000000
label
generation              19309
root                    814055424
sys_array_size          129
chunk_root_generation   19249
root_level              0
chunk_root              23068672
chunk_root_level        1
log_root                800866304
log_root_transid (deprecated)   0
log_root_level          0
total_bytes             1649267441664
bytes_used              254290964480
sectorsize              4096
nodesize                16384
leafsize (deprecated)   16384
stripesize              4096
root_dir                6
num_devices             1
compat_flags            0x0
compat_ro_flags         0x3
                        ( FREE_SPACE_TREE |
                          FREE_SPACE_TREE_VALID )
incompat_flags          0x361
                        ( MIXED_BACKREF |
                          BIG_METADATA |
                          EXTENDED_IREF |
                          SKINNY_METADATA |
                          NO_HOLES )
cache_generation        0
uuid_tree_generation    19309
dev_item.uuid           547b5791-e37d-4d95-81ce-79c95bfe3d9f
dev_item.fsid           c754e01e-710e-413d-bdc3-307abb4545c6 [match]
dev_item.type           0
dev_item.total_bytes    1649267441664
dev_item.bytes_used     263091912704
dev_item.io_align       4096
```

```
dev_item.io_width       4096
dev_item.sector_size    4096
dev_item.devid          1
dev_item.dev_group      0
dev_item.seek_speed     0
dev_item.bandwidth      0
dev_item.generation     0
```

and take note of the `dev_item.total_bytes` value. This is the total size, in bytes, the file system, and notice how this is bigger from the product found above, and by exactly 32767*512 bytes, or 32767 *sectors*. This is because the writable area for filesystem on the volume starts at sector 32768, *after* the 32757 byte security header generated for the filesystem by `cryptsecret` when the filesystem was first generated and encrypted! Now, because of this, if the `/dev/mapper/root` device were to be mounted using `mount /dev/mapper/root /mnt`, or inspected using `btrfs check --force /dev/mapper/root` (--force is needed for a mounted filesystem), the error

```
block device size is smaller than total_bytes in device item, has
1649250664960 expect >= 1649267441664
```

is generated. However, this is okay and the device is not misaligned with the partition's filesystem area! It's simply because of the way `cryptsetup` sets the partition up with where it writes the file system that this happens, the allocated block device is set up to start writing/reading encrypted data at the sector where the filesystem begins (32768), and the security header (containing the encryption key) is written along with the filesystem. If this didn't happen (i.e., the file system and the virtual device sizes were equal), data could be written somewhere where there is no filesystem and that data could never be found (in the last 32768*512 bytes of the partition/virtual device file). Meanwhile the file system thinks it's "full" with user data when really 16 MiB was just lost to the security header. However, because btrfs knows nothing about the encryption header, it gets "confused" when it encounters the virtual block device writing to it that's smaller than itself ("thinking" that it's the actual underlying storage device and therefore should be equal or greater in size when there's a very good reason it isn't), and then gives the above error. All in all, the file system should remain equal to the size of the partition (1.5 TiB here) even if the virtual block device allocated for it by `dmsetup` is smaller in order to avoid any problems with the filesystem filling up sooner than expected (although I suppose 16 MiB = 32768 sectors less isn't much of a big deal; there's certainly bigger issues if that much space gets used up).

Git commit signing using `gpg` and how key pairs work

Sign and verify commit signatures using git:
https://medium.com/@petehouston/quick-guide-to-sign-your-git-commits-c11ce58c22e9
https://www.cloudwithchris.com/blog/gpg-git-part-2/
All about subkeys!: https://wiki.debian.org/Subkeys
Use `gpg` for creating code-signing keys/sub-keys that you can then publish to the ubuntu keyshare and add to GitHub! Private sub-keys are used for signing/decryption, while the primary key is only ever used for making *major* changes to the keypair, like changing the password.
All you have to do is generate a signing key-pair on the machine using `gpg`, then add the *public* key in ASCII-armor format (given by `gpg --armor --export <keyid>`) to your GitHub profile! You then just tell your

local `git` install to sign your commits using your *private* key by setting `git config --global user.signingkey=<keyid>` and then telling `git` to use your local `gpg` install for signing with `git config --global gpg.program=$(which gpg)`.
Also, if there's an error like `gpg: signing failed: Inappropriate ioctl for device` while committing, run `export GPG_TTY=$(tty)` and add it to `~/.bashrc`.
See https://docs.github.com/en/authentication/managing-commit-signature-verification
You *encrypt* the message that's *sent* with the recipient's *public* key, and then the recipient *decrypts* it with their *private* key. And you *verify* the data that's *received* with the sender's *public* key, which they *sign* using their *private* key. Take sending and receiving data from your account on GitHub for instance. First you add your SSH *public* key to your GitHub profile. Then when receiving data over SSH for the first time from GitHub, their *public* key is given to you. Then you can *verify* that the data indeed came from GitHub using their *public* key and, you can *decrypt* the data using your *private* key, which they *encrypted* using your *public* key and *signed* using their *private* key! In the opposite direction, when *sending* data to GitHub, you *encrypt* it using GitHub's *public* key and *sign* it using your *private* key, and then they can only *decrypt* it using their *private* key (so you can be sure that only GitHub can read the data) and they *verify* that it came from you using your *public* key! Notice that GitHub *only* needs your public key and you *only* need their public key for this all to work, and the private key never leaves the owner's possession! Look at `~/.ssh/known_hosts` for GitHub's public keys. This is pretty much how *any* communication over SSH takes place, where you place your public key on the server and you place their's in `~/.ssh/known_hosts`!
Separating SSH and GPG keys this way ensures that even if someone else manages to get ahold of your SSH private key and can access your account, the commit would still show up as unverified if they don't also have one of your private GPG sub-keys, which you can easily deactivate and regenerate from your primary private key if it were also compromised.
You can also publish your public GPG keys on online keyshares such as `https://keyserver.ubuntu.com/` so others can easily find them! Use `gpg --send-keys <keyid>` to do this. You can also search for keys on the keyservers by going to the website or using `gpg --search-keys <url> <search string>`.
Key servers: https://en.wikipedia.org/wiki/Key_server_(cryptographic)

Modifying `sudo` and `PAM` behavior

Configure `sudo` behavior using `/etc/sudoers` file with the "Defaults" directive:
https://www.sudo.ws/docs/man/sudoers.man/#SUDOERS_OPTIONS
Adding the line `Defaults insults, passwd_tries=5, timestamp_timeout=30` results in some interesting behavior now lol..
It also makes it so that max 5 attempts (instead of the default 3) are allowed, and user is authenticated for 30 min (instead of default 5)
NOTE: MODIFY THE /etc/sudoers FILE BY ONLY INVOKING THE FOLLOWING

```
$ EDITOR="code -r --no-sandbox --user-data-dir=/.vscode --wait" visudo
```

SINCE A LOCKFILE IS CREATED IN THAT CASE
Note that `sudo` interally uses Linux PAM (Pluggable Authentication Modules) for authentication, which is a set of kernel libraries for performing modular authentication (i.e. configuring custom authentication methods for different programs), with the program configs specified under `/etc/pam.d/`. In particular, the

`/etc/pam.d/sudo` file specifies the configration for `sudo`, which itself just derives from the built-in `/etc/pam.d/system-auth` default auth scheme. In short, PAM works by invoking different modules (really compiled C object files) with certain option arguments for handling different parts of the auth flow (learn more: https://man.archlinux.org/man/core/pam/PAM.8.en).
Take note of the `pam_faillock.so` module in particular, which handles whether the user is rejected after authentication is attempted: how this is handled is configured in `/etc/security/faillock.conf`, which specifies all the options that could also be passed when the module is invoked, such as the max no. of authentication attempts before rejection, and the (irritiating) lockout period for the user after the max allowed attempts is reached. (NOTE: Modifying this file will be effective immediately since `faillock.so` isn't really a running daemon/service but a program that's invoked which reads the config). The interesting bit is how the lockout period and other options seem to have an immediate effect on `sudo` usage, yet changing the max number of attempts allowed doesn't seem to change anything. This is because this is overridden by `sudo` itself, and the option in `/etc/security/faillock.conf` just sets the default for *all* programs that don't override it! Therefore, to change the max number of attempts, you must modify the `sudoers` file using `visudo`, but all other (tested) behavior can be changed in `faillock.conf`.
LEARN MORE: https://man.archlinux.org/man/core/pam/faillock.conf.5.en
NOTE: The `faillock` command line utility can be used to reset the current user's failed attempts (tracked in `/var/run/faillock/<user>`) using `faillock --reset` thereby bypassing the lockout. Also, `sudo -k` can be used toi reset the current user's root auth status (so they have to enter their password on the next usage)

Using the Arch User Repository (AUR)

Download and install packages from source on ARCH from the AUR using PKGBUILD files: https://wiki.archlinux.org/title/Arch_User_Repository
Simply clone the repo, `cd` into it, then run `make -sic` to build and install the package! Just be sure to VET the repo thoroughly though since it's all user contributed stuff and not at all verified for security! Look through the PKGBUILD file, consider the popularity of the package, look through comments, look at how recent the latest update was, etc...There are also helpers made for this process, such as `yay`, but they're really not needed...

Querying GPU/CPU stats

Use `radeontop` or `nvtop` to query status of AMD CPU/GPU hardware (which can be installed using `pacman -S` on Arch)

Fixes on 4-19-24 for fixing bad boot issue

Man was this quite the scare with the system not booting...

- Fixed wrong partition UUID (PARTUUID) configured in the boot loader kernel parameter options after the main partition was recreated after being resized
    - BE SURE TO UPDATE THE `PARTUUID` KERNEL PARAMETER IN `/boot/loader/entries/*.conf` WHENEVER THE ROOT PARTITION'S UUID CHANGES!!!
    - PRO TIP: Press `m` while in the `systemd-boot` bootloader's menu to modify kernel parameters before booting!

- Deleted password for `root` by mounting the main file system `/dev/mapper/root` and `chroot`ing into the mount point while in the pre-boot emergency shell, then invoking `passwd -d root`.
    - This fixed the root account console being locked whenever `systemd` was being launched after the root filesystem was mounted and `/sbin/init` was invoked.
    - PRO TIP: Use `passwd -S <user>` to look up the status of a user's password.
- Fixed `zram` config issue with the `writeback-device` parameter not working for some reason, which involved modifying the `/etc/systemd/zram-generator.conf`configuration file and restarting the `systemd-zram-setup@zram0` systemd service.
    - Before the fix, the service was just failing to launch, which halted the entire `systemd` startup process and threw me into an emergency shell.
- Fixed issue with `mount`ing on `/home` failing based on how it was defined in `/etc/fstab` since the btrfs subvolume `@home` got moved into the `/home` root directory somehow. This involved simply commenting out the `/home` mounting in `/etc/fstab`
    - Before the fix, the `local-fs.target` systemd target was failing to complete since `mount -a` was failing.