lsblk Block device inspection

START HERE

lsblk
List disks and partitions

lsblk -f
Add filesystem, label, UUID

lsblk -o NAME,SIZE,TYPE, MOUNTPOINTS
Pick your columns

lsblk -p
Show full /dev paths

sudo blkid
Show UUIDs and labels

findmnt
Tree of mounts

findmnt *<path>*
Which device holds this?

ls -l /dev/disk/by-uuid
Stable device names

Disk sda, nvme0n1 → *partition table* → **Partition** sda1, nvme0n1p1 → *mkfs* → **Filesystem** UUID, LABEL → *mount* → **Mount point** /, /mnt/data

CONCEPTS

lsblk, findmnt and blkid only read. The tools that change disks (wipefs without -n, mkfs, fdisk) are separate: check the device name first.

Kernel names like sda change between boots. Refer to disks by UUID, LABEL or /dev/disk/by-* in fstab and scripts.

lsblk reads sysfs and udev, so it works without root. blkid without root shows only what its cache already knows; use sudo for a fresh probe.

TYPE tells what a row is: disk, part, lvm, crypt, raid1, loop, rom. Children are shown beneath the device they sit on.

LIST DEVICES

lsblk
Tree of block devices

lsblk -f
Filesystem type, label, UUID, usage

lsblk -a
Include empty and hidden devices

lsblk -d
Disks only, no partitions

lsblk -l
Flat list instead of tree

lsblk -p
Print full /dev/... paths

lsblk *<disk>*
Show only this disk and its children

lsblk -s *<part>*
Show parents instead of children

lsblk -e7
Hide loop devices (major 7)

lsblk -i
ASCII tree, safe for pasting

lsblk -t
Topology: sector sizes, scheduler

lsblk -m
Owner, group and mode

lsblk -D
Discard (TRIM) support

lsblk -S
SCSI devices: HCTL, vendor, transport

lsblk -N
NVMe devices

CHOOSE COLUMNS

lsblk -o NAME,SIZE,TYPE,MOUNTPOINTS
Pick output columns

lsblk -o +UUID,LABEL
Add columns to the default set

lsblk -O
Print every column

lsblk -H
List available columns

lsblk -x SIZE
Sort by a column

lsblk -b
Sizes in bytes

lsblk -n
No header line

lsblk -o NAME,SERIAL,MODEL,TRAN
Identify a physical disk

lsblk -o NAME,ROTA,HOTPLUG,RM
SSD vs HDD, removable flags

lsblk -o NAME,PARTUUID,PARTLABEL
Partition table identifiers

OUTPUT FOR SCRIPTS

lsblk -J
JSON output

lsblk -P
KEY="value" pairs, one line per device

lsblk -r
Raw output, no tree characters

lsblk -dno NAME,SIZE
Bare disk list, no header

lsblk -Q 'TYPE=="part"'
Filter rows by expression

lsblk -o NAME -n -r *<disk>*
Names of a disk and its partitions

lsblk -y
Column names usable as shell variables

BLKID

sudo blkid
UUID, LABEL and TYPE of every device

sudo blkid *<dev>*
Probe one device

sudo blkid -s UUID -o value *<dev>*
Print just the UUID

sudo blkid -o export *<dev>*
KEY=value lines, sourceable

sudo blkid -o list
Table of devices and mount state

BLKID (cont.)

blkid -U *<uuid>*
Device name for a UUID

blkid -L *<label>*
Device name for a label

sudo blkid -t TYPE=ext4
Find devices by token

sudo blkid -p *<dev>*
Low-level probe, bypasses cache

FINDMNT

findmnt
Mounted filesystems as a tree

findmnt *<path>*
Mount that serves this mount point or device

findmnt -T *<path>*
Mount that contains this path

findmnt -no SOURCE *<path>*
Just the device behind a path

findmnt -S UUID=*<uuid>*
Find a mount by device tag

findmnt -t ext4,xfs
Limit to filesystem types

findmnt --real
Hide pseudo filesystems (proc, sysfs)

findmnt -l
Flat list instead of tree

findmnt -o TARGET,SOURCE, FSTYPE,OPTIONS
Choose columns

findmnt -D
Output like df

findmnt -J
JSON output

findmnt -s
Read /etc/fstab instead of live mounts

findmnt --verify
Check fstab for mistakes

findmnt -R *<path>*
Include submounts

findmnt -p
Watch for mount changes

STABLE NAMES

ls -l /dev/disk/by-uuid
Filesystem UUID to device

ls -l /dev/disk/by-label
Filesystem label to device

ls -l /dev/disk/by-id
Model and serial based names

ls -l /dev/disk/by-path
Names from the bus location

ls -l /dev/disk/by-partuuid
Partition table UUID to partition

STABLE NAMES (cont.)

readlink -f /dev/disk/by-uuid/*<uuid>*
Resolve a link to sdX

by-id and by-path links exist only if udev made them. Disks without a serial may be missing from by-id.

WIPE, RESCAN, UDEV

sudo wipefs *<dev>*
List signatures, erase nothing

sudo wipefs -n -a *<dev>*
Dry run of a full wipe

sudo wipefs -a *<dev>*
Erase all signatures (destructive)

sudo wipefs -b -a *<dev>*
Wipe and back up the signatures

sudo partprobe *<disk>*
Make the kernel re-read the table

udevadm info *<dev>*
Show udev data and symlinks

udevadm info -q property *<dev>*
Only the udev properties

udevadm info -a *<dev>*
Attributes up the device chain

sudo udevadm settle
Wait for the udev queue to drain

wipefs -a destroys the signatures that tools use to recognise the disk. Always run it with -n first and read the list.

RECIPES

Find the USB stick safely

```
lsblk -o NAME,SIZE,MODEL,TRAN,
HOTPLUG,MOUNTPOINTS
# plug it in, run again,
compare
lsblk -p -d -o
NAME,SIZE,MODEL /dev/sdb
```

fstab entry from a UUID

```
uuid=$(sudo blkid -s UUID -o
value /dev/sdb1)
echo "UUID=$uuid /mnt/data ext4
defaults 0 2"
findmnt --verify
```

What is using this path?

```
findmnt -T /var/lib/docker
lsblk -s $(findmnt -no SOURCE -
T /var/lib/docker)
df -h /var/lib/docker
```

Disk names and sizes as JSON

```
lsblk -J -b -d -o
NAME,SIZE,TYPE |
  jq -r '.blockdevices[] |
"\(.name) \(.size)"'
```