# ZFS Cheat Sheet

## 1. Identify Disks

- **lsblk**:

```
lsblk -o NAME,SIZE,TYPE,MOUNTPOINT
```

Lists block devices and helps identify free disks.

- **Optional partitioning**:

Use `fdisk / parted` to create or inspect partitions if needed:

```
fdisk /dev/sdb
parted /dev/sdb
```

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## 2. ZPOOL Commands

### 2.1 Create a Pool

- **zpool create**

```
zpool create <poolname> <device(s)>
# Example: zpool create mypool /dev/sdb /dev/sdc
```

Creates a new pool (optionally configure RAID with `mirror`, `raidz`, etc.).

### 2.2 List & Status

- **zpool list**

```
zpool list
```

Shows summary of all pools (size, alloc, free).

- **zpool status**

```
zpool status [poolname]
```

Displays health, error counts, and underlying devices.

## 2.3 Expand or Remove Devices

- **zpool add**

```
zpool add <poolname> <device>
```

Adds a new device/vdev to increase pool capacity.

- **zpool remove**

```
zpool remove <poolname> <device>
```

Removes device from pool (depends on layout support).

- **zpool attach / detach**

```
zpool attach <poolname> <olddevice> <newdevice>
zpool detach <poolname> <device>
```

For mirrors only: add or remove disks from a mirror.

## 2.4 Device Maintenance

- **zpool offline / online**

```
zpool offline <poolname> <device>
zpool online <poolname> <device>
```

Temporarily take a device offline for maintenance, then bring it back.

## 2.5 Export & Import

- **zpool export**

```
zpool export <poolname>
```

Unmounts and detaches the pool from the current system.

- **zpool import**

```
zpool import <poolname>
# or: zpool import -d /dev/disk/by-id
```

Scans for exported pools and brings them online.

### 2.6 Destroy Pool

- **zpool destroy**

```
zpool destroy <poolname>
```

Permanently destroys pool and data (use with extreme caution).

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## 3. ZFS Filesystem Commands

### 3.1 Create a Filesystem

- **zfs create**

```
zfs create <poolname>/<filesystem>
# Example: zfs create mypool/myfs
```

Makes a new filesystem within a pool.

### 3.2 Listing Filesystems

- **zfs list**

```
zfs list
```

Shows ZFS filesystems, usage, and mountpoints.

## 3.3 Mount / Unmount

- ZFS auto-mounts by default if `mountpoint` property is set.
- **Change mountpoint**:

```
zfs set mountpoint=/data mypool/myfs
```

- **Manual unmount / mount**:

```
zfs unmount mypool/myfs
zfs mount mypool/myfs
```

## 3.4 Properties (Get & Set)

- **zfs get / zfs set**

```
zfs get all <pool/fs>
zfs set compression=on <pool/fs>
```

Toggle features such as compression, quotas, dedup, etc.

## 3.5 Snapshots & Clones

- **zfs snapshot**

```
zfs snapshot <pool/fs>@<snapshotname>
```

- **View snapshots**:

```
zfs list -t snapshot
```

- **Rollback**:

```
zfs rollback <pool/fs>@<snapshotname>
```

- **Clone**:

```
zfs clone <pool/fs>@<snapshotname> <pool/fs_clone>
```

### 3.6 Send & Receive

- **Backup/Replication**:

```
zfs send <pool/fs>@<snap> | zfs receive <pool/fs2>
```

Transfers snapshots between pools or systems.

### 3.7 Destroy Filesystem

- **zfs destroy**

```
zfs destroy <pool/fs>
```

Deletes filesystem and snapshots (if not protected). Proceed with caution!

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## 4. Pool Maintenance & Monitoring

- **zpool scrub**:

```
zpool scrub <poolname>
```

Checks for and repairs data corruption.

- **zpool iostat**:

```
zpool iostat [poolname] [interval]
```

Displays I/O statistics.

- **zpool history**:

```
```

```
zpool history <poolname>
```

Lists historical commands executed on the pool.

- **Logs**:
  Monitor `dmesg` or system logs for ZFS-related messages.

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**Pro Tips**:

- Always verify disks with `lsblk` before creating a pool.
- Snapshots are cheap and an excellent way to protect data.
- Keep an eye on pool health with `zpool status`.
- Export pools before physically removing disks or moving to another system.

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