ZFS Pools and snapshots

CONCEPTS

Two commands: zpool manages disks and pools, zfs manages datasets (filesystems, volumes, snapshots) inside them.

Disks vdevs: mirror, raidz
↓ `zpool create`
Pool shared storage
↓ `zfs create`
Dataset filesystem or zvol
↓ `zfs snapshot`
Snapshot read-only, cheap
↓ `zfs clone / send`
Clone / stream writable copy or backup

POOLS

`zpool status`
Health, errors and scrub state

`zpool status -x`
Show only unhealthy pools

`zpool list`
Size, used, free and health per pool

`zpool create <pool> mirror <disk1> <disk2>`
Create a mirrored pool

`zpool create <pool> raidz <disk1> <disk2> <disk3>`
Create a raidz pool

`zpool scrub <pool>`
Verify all checksums, repair from redundancy

`zpool import`
List pools available to import

`zpool import <pool>`
Import a pool

`zpool export <pool>`
Cleanly detach a pool

`zpool iostat -v <pool> 5`
Per-vdev I/O every 5 seconds

`zpool replace <pool> <old> <new>`
Swap a failed or old disk

DATASETS

`zfs list`
List filesystems and volumes

DATASETS (cont.)

`zfs list -r <pool>`
List a pool's datasets recursively

`zfs create <pool>/<name>`
Create a filesystem

`zfs destroy <dataset>`
Delete a dataset

`zfs destroy -rn -v <dataset>`
Dry-run a recursive destroy

`zfs list -o space`
Space broken down by use

PROPERTIES

`zfs get all <dataset>`
Show every property

`zfs get <prop> <dataset>`
Show one property

`zfs set compression=lz4 <dataset>`
Enable compression

`zfs set mountpoint=<path> <dataset>`
Change where it mounts

SNAPSHOTS AND CLONES

`zfs snapshot <dataset>@<name>`
Create a snapshot

`zfs snapshot -r <pool>@<name>`
Snapshot a pool and all children

`zfs list -t snapshot`
List snapshots

`zfs rollback <dataset>@<snap>`
Revert to a snapshot

`zfs destroy <dataset>@<snap>`
Delete a snapshot

SEND AND RECEIVE

`zfs send <dataset>@<snap> | zfs recv <pool>/<name>`
Copy a snapshot locally

`zfs send <dataset>@<snap> | ssh <host> zfs recv <pool>/<name>`
Replicate to another machine

`zfs send -i <old> <new> | zfs recv <ds>`
Send only changes between snapshots