

Storage ☐☐

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Ceph

Crush Rule

```
ceph osd crush rule create-replicated rule-nvme default host nvme
ceph osd crush rule create-replicated rule-hdd default host hdd
ceph osd crush rule rm replicated_rule
```

HDD Pool SSD

```
ceph osd tier add Ceph_Pool Cache
ceph osd tier cache-mode Cache writeback
ceph osd tier set-overlay Ceph_Pool Cache
ceph osd pool set Cache hit_set_type bloom
#ceph osd pool set Cache hit_set_count 12
#ceph osd pool set Cache hit_set_period 14400

ceph osd pool set Cache target_max_bytes xxxxxx
ceph osd pool set Cache target_max_objects xxxxxx
ceph osd pool set Cache min_read_recency_for_promote 2
ceph osd pool set Cache min_write_recency_for_promote 2

ceph osd pool set Cache cache_target_dirty_ratio 0.4
ceph osd pool set Cache cache_target_dirty_high_ratio 0.6
ceph osd pool set Cache cache_target_full_ratio 0.8
ceph osd pool set Cache cache_min_flush_age 600
ceph osd pool set Cache cache_min_evict_age 1800
```

#remove Cache Pool

```
ceph osd tier cache-mode Cache readproxy
rados -p Cache ls
rados -p Cache cache-flush-evict-all
ceph osd tier remove-overlay Ceph_Pool
ceph osd tier remove Ceph_Pool Cache
ceph delete Cache Cache --yes-i-really-really-mean-it
```

Ceph LVM Disk Label

```
ceph-volume lvm zap /dev/sdX --destroy
```

Ceph

```
ceph -s
```

```
ceph osd pool stats
```

ceph cluster

```
ceph osd set noout
```

```
ceph osd set nobackfill
```

```
ceph osd set norecover
```

ceph cluster

```
ceph osd unset noout
```

```
ceph osd unset nobackfill
```

```
ceph osd unset norecover
```

ZFS

ZFS SSD Cache Log

```
zpool add ZFS_Pool cache << /dev/xxxx >>
```

```
zpool add ZFS_Pool log << /dev/xxxx >>
```

ZFS

zfs list

```
root@pve:~# zfs list
NAME                                USED  AVAIL  REFER  MOUNTPOINT
ZFS_Pool                            20.5G  4.40T   96K    /ZFS_Pool
ZFS_Pool/subvol-401-disk-1          1.71G  18.3G  1.71G  /ZFS_Pool/subvol-401-disk-1
ZFS_Pool/vm-301-disk-0              18.8G  4.40T  18.8G  -
root@pve:~#
```

zpool list

```
root@pve:~# zpool list
NAME      SIZE  ALLOC  FREE  CKPOINT  EXPANDSZ  FRAG    CAP  DEDUP  HEALTH  ALTROOT
ZFS_Pool  4.55T  20.6G  4.53T  -         -         0%    0%   1.00x  ONLINE  -
root@pve:~#
```

zpool status

```
root@pve:~# zpool status
pool: ZFS_Pool
state: ONLINE
scan: scrub repaired 0B in 00:04:54 with 0 errors on Sun Jun 9 00:28:55 2024
config:
```

NAME	STATE	READ	WRITE	CKSUM
ZFS_Pool	ONLINE	0	0	0
ata-ST5000LM000-2AN170_WCJ089VZ	ONLINE	0	0	0
logs				
nvme-eui.0000000000000000707c183920000600-part4	ONLINE	0	0	0
cache				
nvme-eui.0000000000000000707c183920000600-part5	ONLINE	0	0	0

```
errors: No known data errors
```

```
root@pve:~# █
```