

Linux-DeDuplizierung

Virtual Data Optimizer (VDO)



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Spitzenleistung heißt, sich auf seine Stärken zu konzentrieren.

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Wir machen Oracle - nur Oracle.
Aus gutem Grund.

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★★★★★
WANTED

~~DEAD~~ || **ALIVE**



★ **CACHE REWARD** ★

#F4240\$



Oracle DBA

(m/w/d/...)

und

Oracle Developer

(m/w/d/...)

SQL, PL/SQL, Apex

★★★★★
WANTED

~~DEAD~~ || **ALIVE**



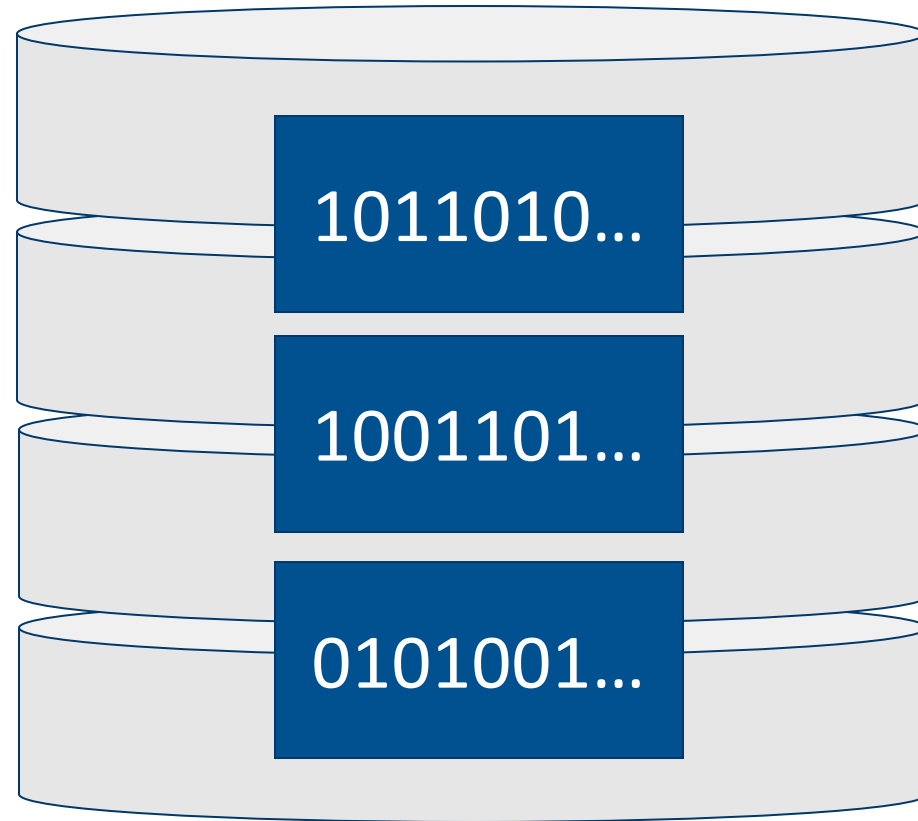
★ **CACHE REWARD** ★

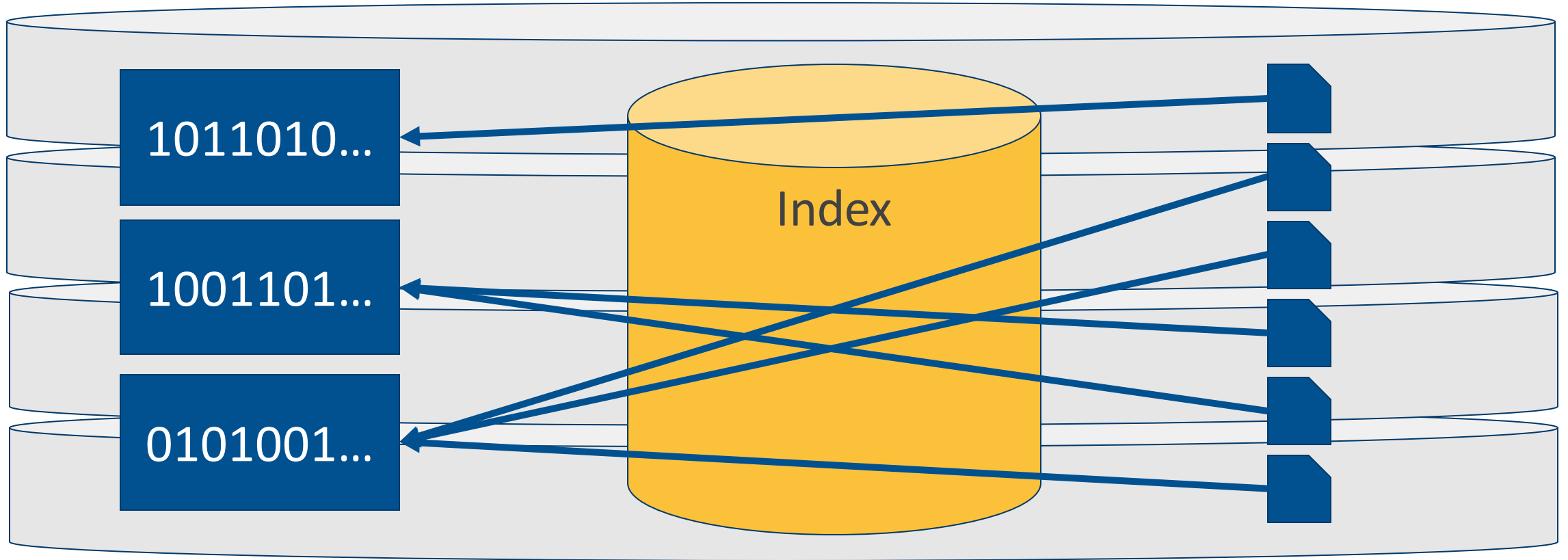
#F4240\$



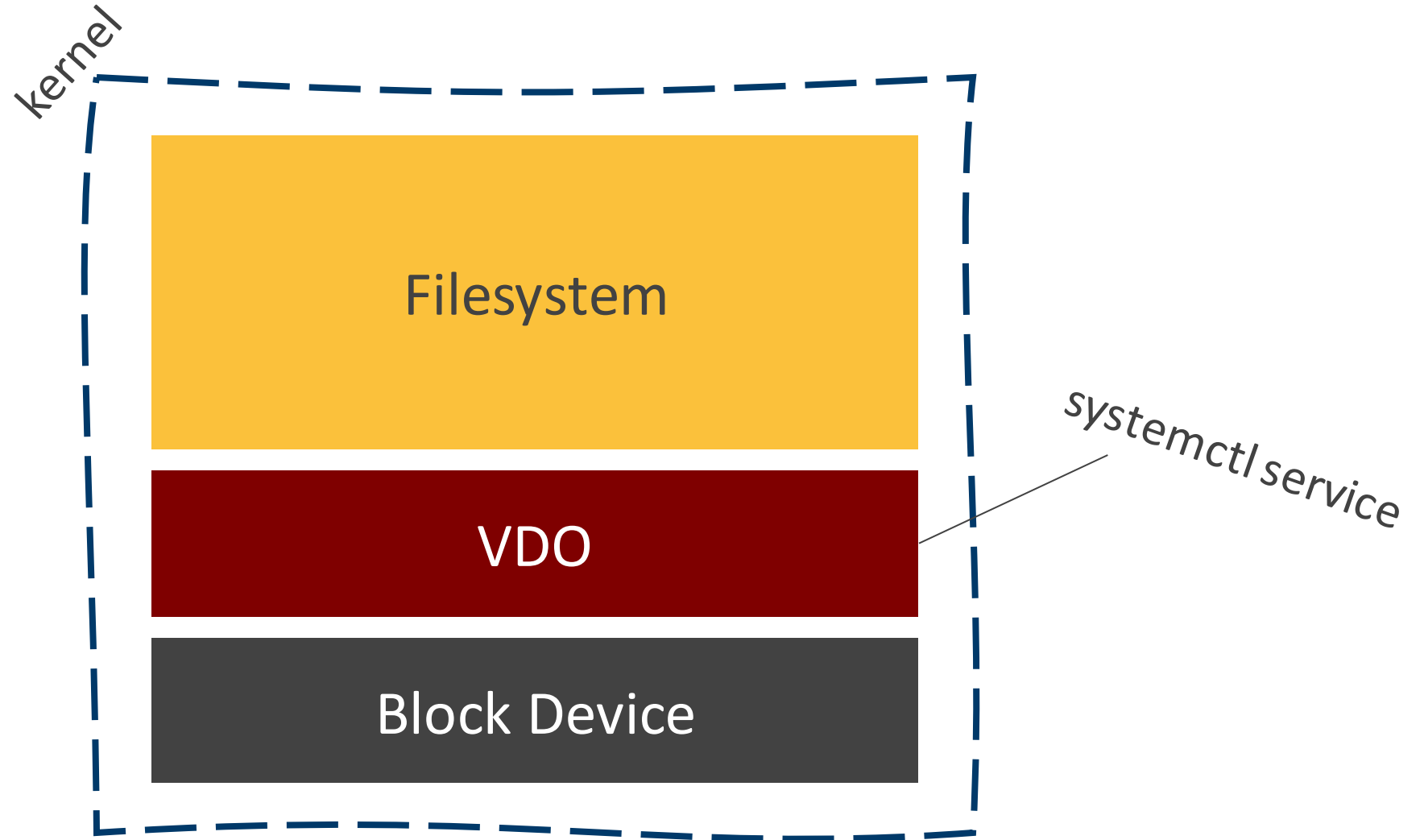
Was ist DeDuplizierung?

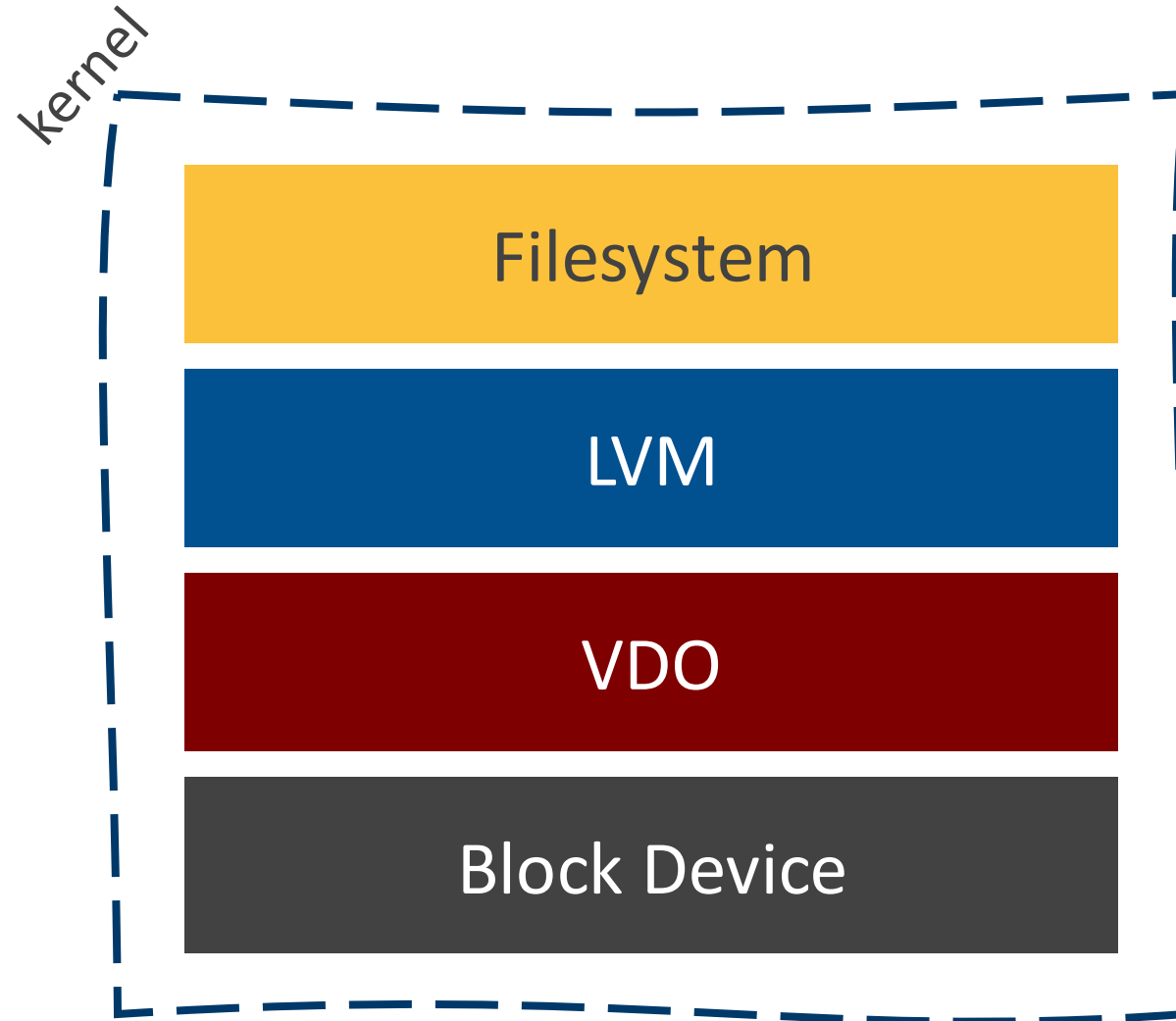
Was ist DeDuplizierung

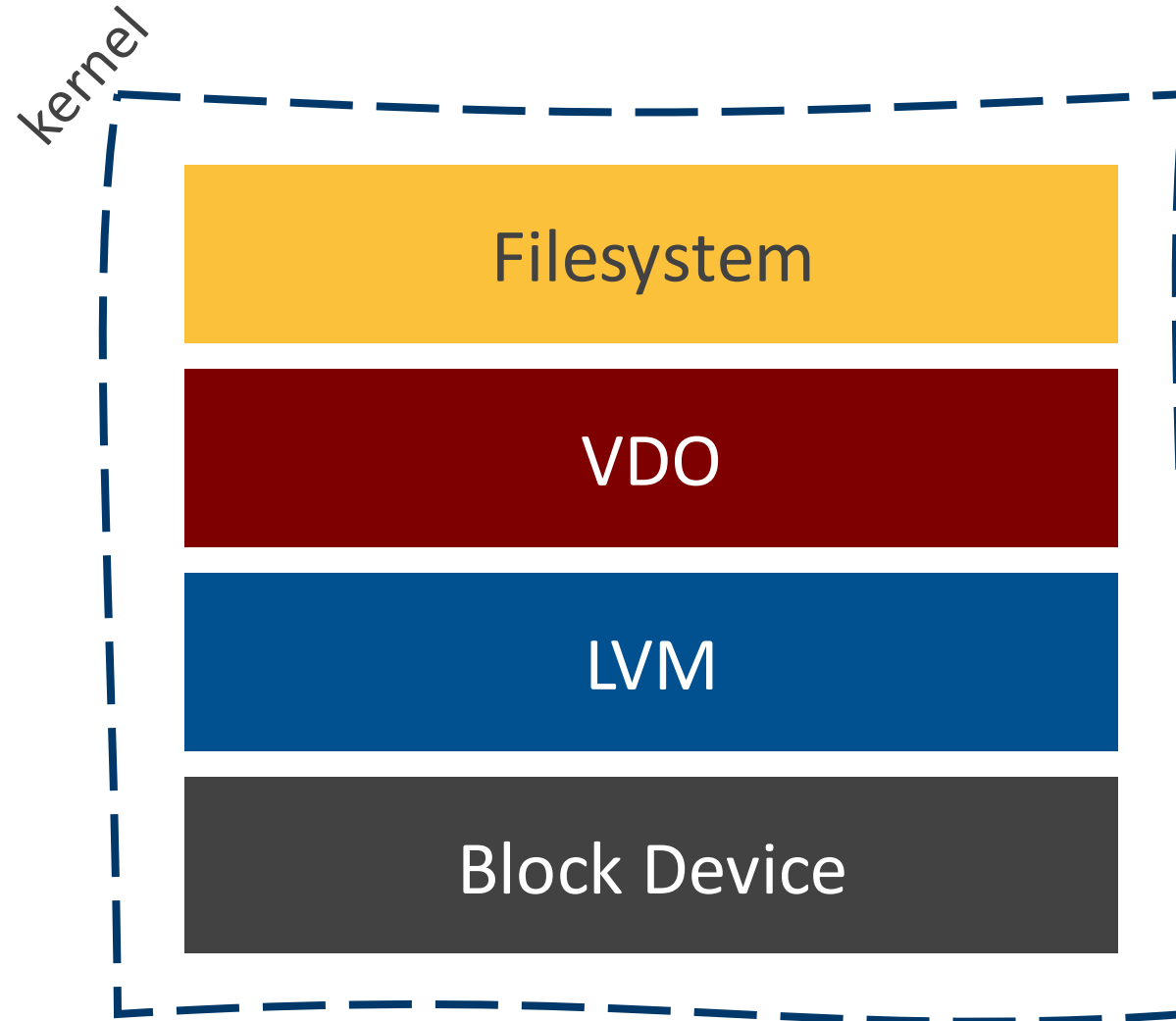


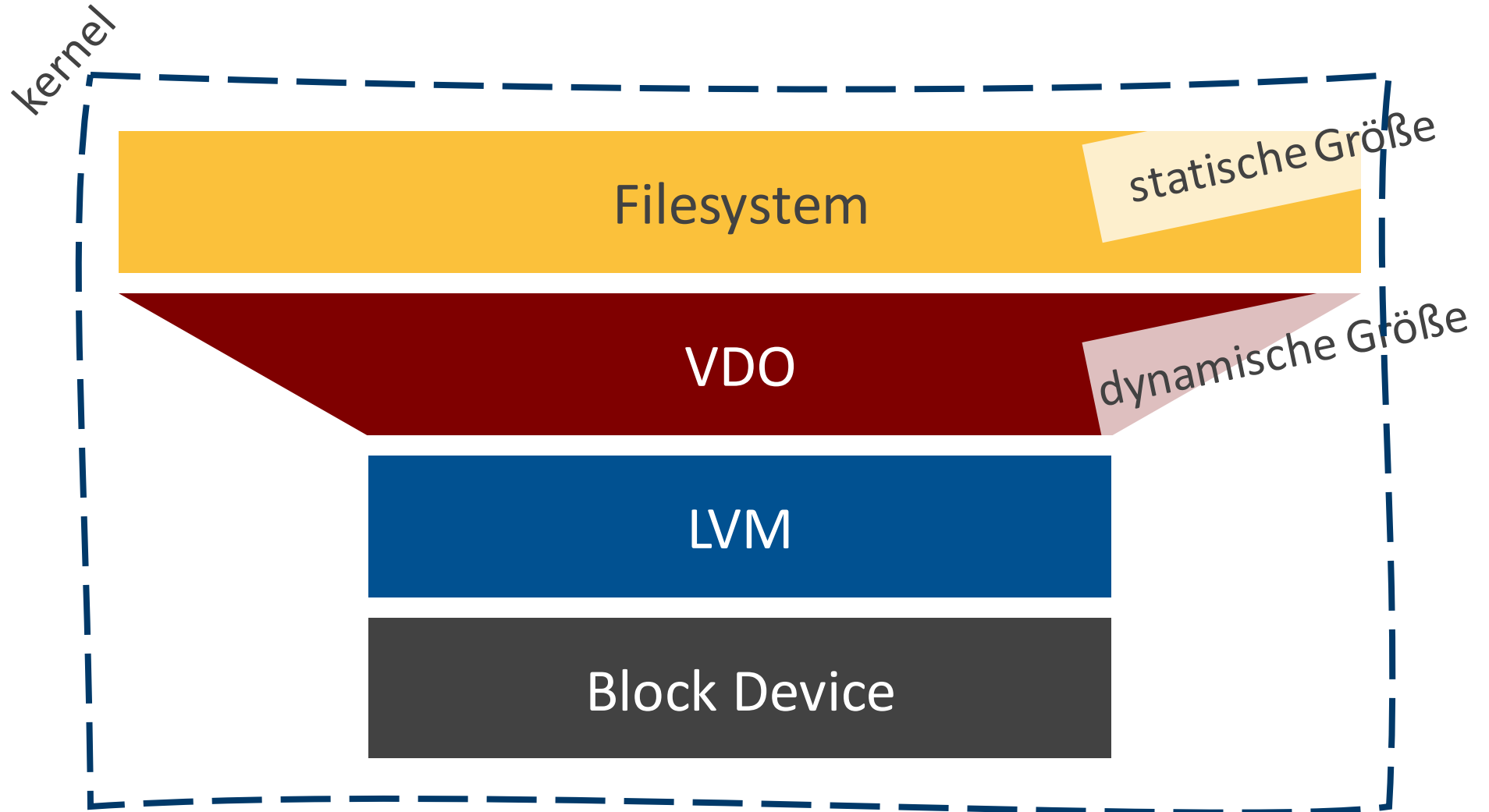


Virtual Data Optimizer









VDO Funktionalität

[Redacted content]

[Redacted content]

[Redacted content]



Zero-Block Elimination



DeDuplication

Zero-Block Elimination

Block Compression

DeDuplication

Zero-Block Elimination

DEMO

Demo Summary

```
$ pvcreate /dev/sdc
$ vgcreate vg_demo /dev/sdc
$ lvcreate -n lv_demo -L 10G vg_demo
$ vdo create --device /dev/vg_demo/lv_demo --name
vdo_demo
$ mkfs.xfs -K /dev/mapper/vdo_demo
$ mkdir /demo

$ cat /etc/systemd/system/demo.mount
[Unit]
Description = Mount file system that lives on a VDO
volume.
Requires = vdo.service
Conflicts = umount.target

[Mount]
What = /dev/mapper/vdo_demo
Where = /demo
Type = xfs
Options = defaults,discard

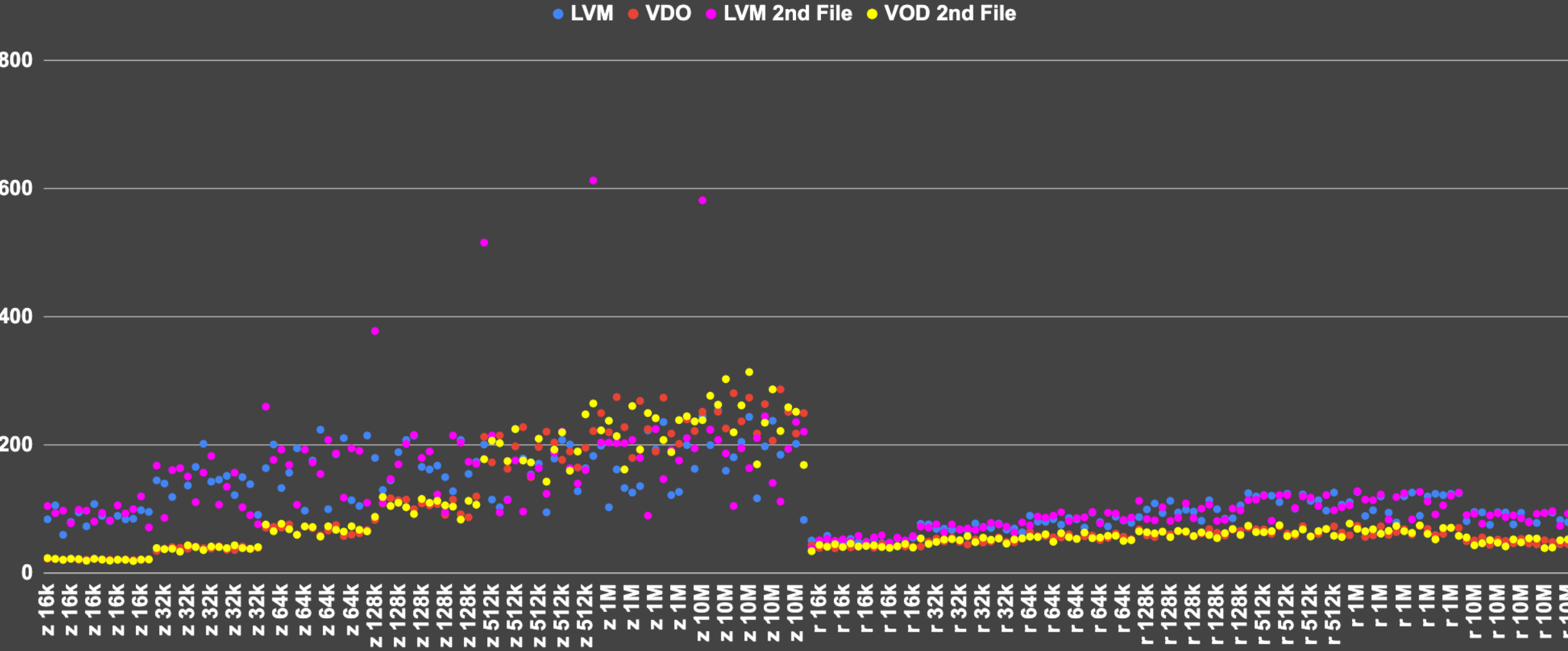
[Install]
WantedBy = multi-user.target
```

```
$ systemctl daemon-reload
$ systemctl status demo.mount
$ df -h
$ dd if=/dev/urandom of=/demo/testFile1 bs=1M count=1024
$ vdo stats -hu
$ cp /demo/testFile1 /demo/testFile2
## Prove that dedup worked:
$ vdo stats -hu
$ cp /demo/testFile1 /demo/testFile3
[...]
## following command will fail due to disk (filesystem)
full. But the VDO device has still space left over.
$ cp /demo/testFile1 /demo/testFile6
$ vdo growLogical --name vdo_demo --vdoLogicalSize 50G
$ xfs_growfs /dev/mapper/vdo_demo
$ df -h
$ cp /demo/testFile1 /demo/testFile6
$ df -h
$ vdo stats -hu
```

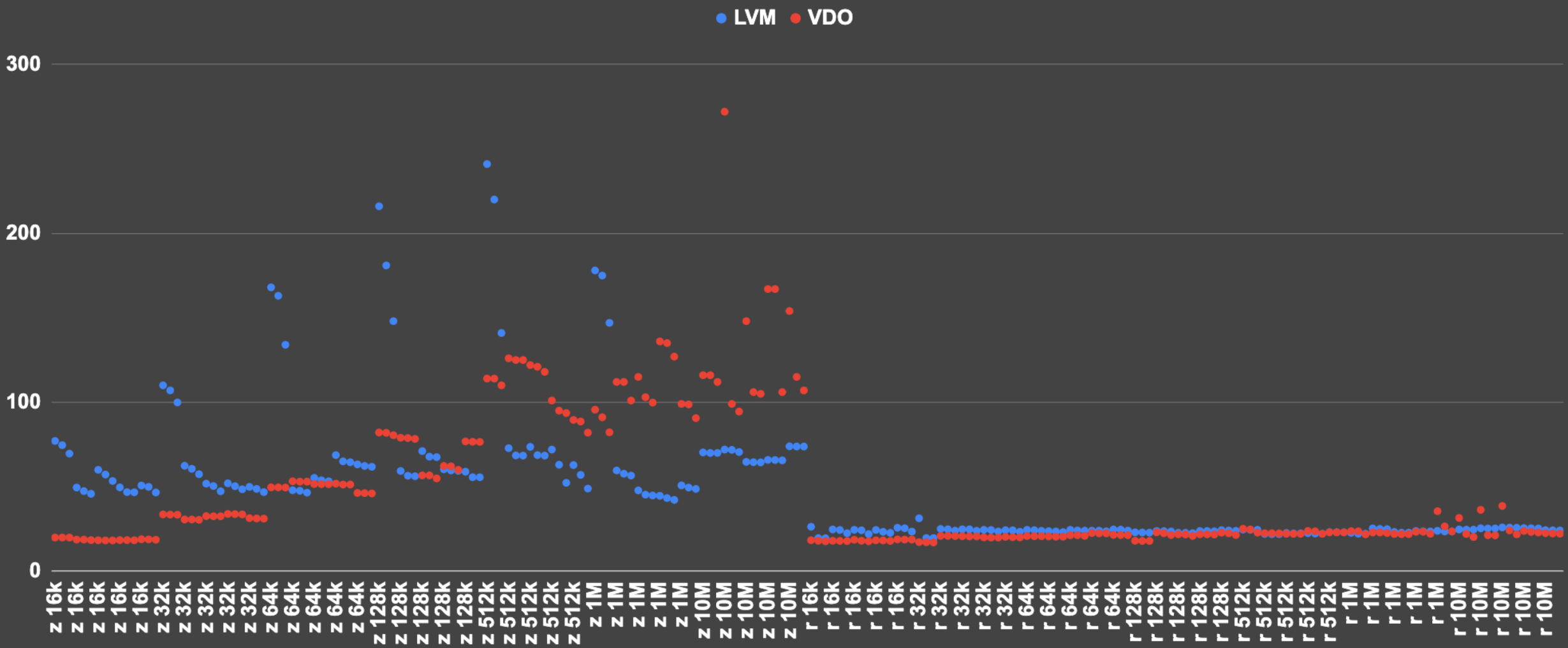
Performance

- Oracle Virtual Box
 - (Bekannt für schlechte I/O)
- VM mit 4GB RAM und 3 CPUs
- SATA Disk Pool

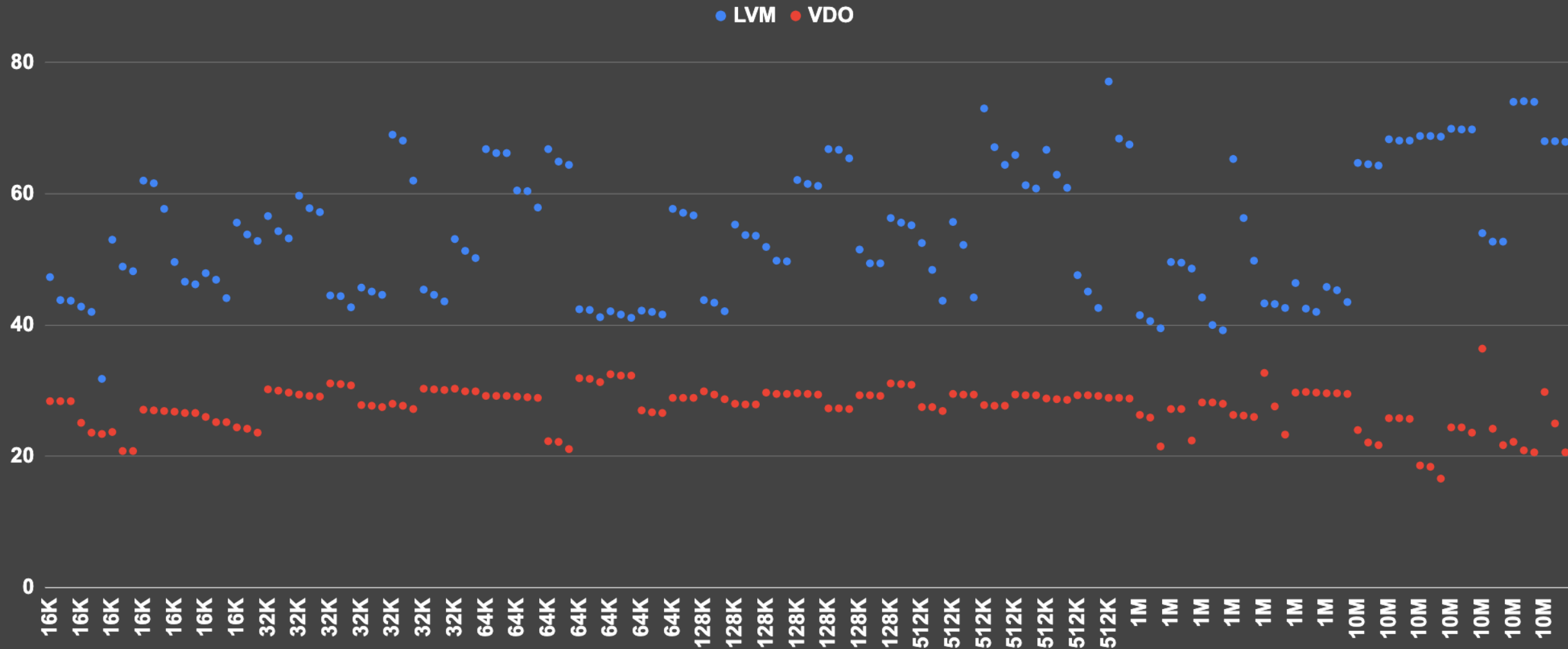
1 Thread Write



Parallel Write



Parallel Read (seq.)



Einsatzgebiete

Notiz für Folien-Download: Die Einsatzgebiete sind unter dem Gesichtspunkt der Performance-Einbußen relativ eindeutig.



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