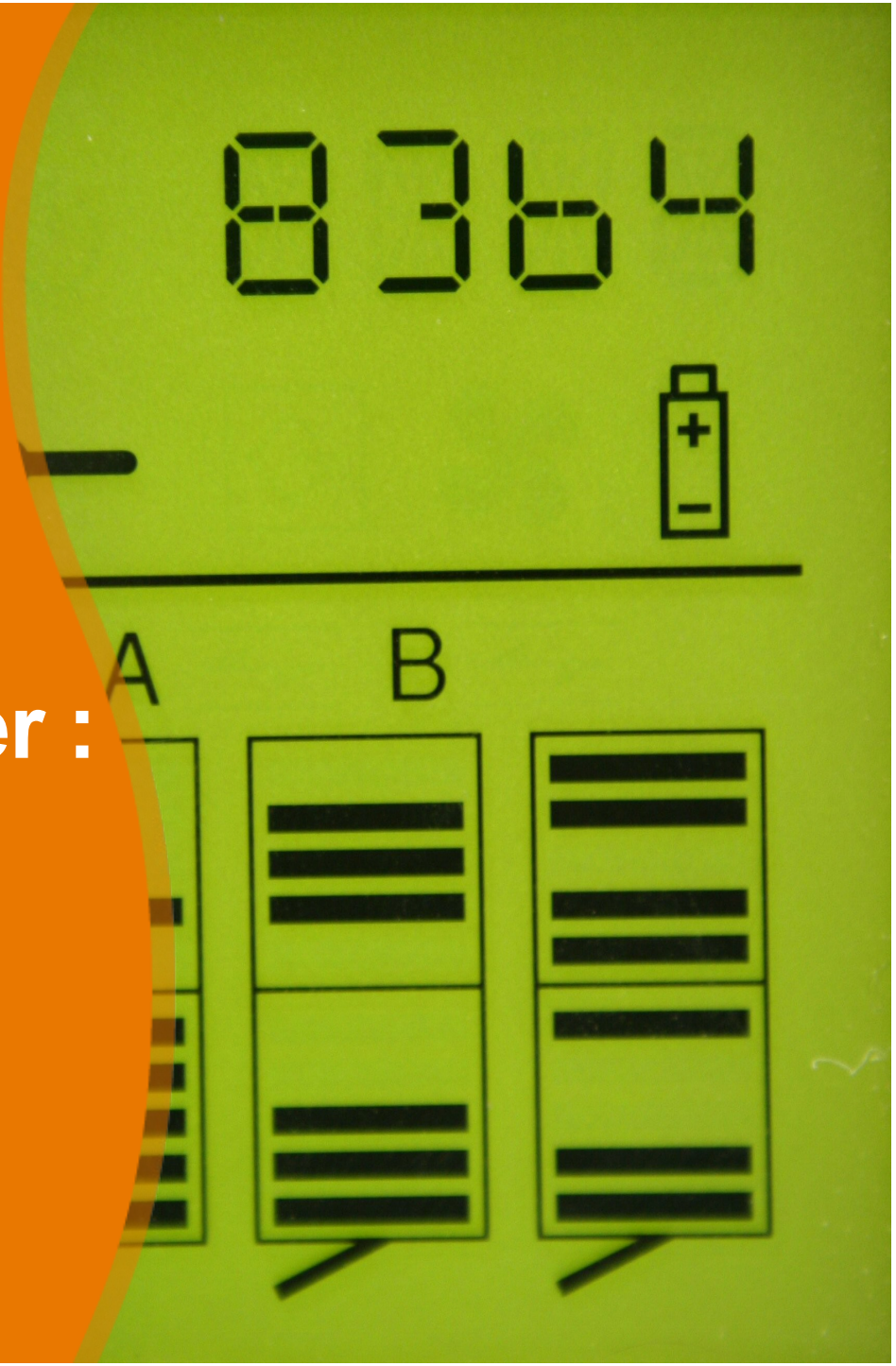
Solaris Volume Manager : Maintenance



Solaris Volume Manager Maintenance

- Device Resyncs
- Hotspares
- Metarecover command
- Metaparam command
- Emergency config rebuilding

`

SVM Device Resyncs

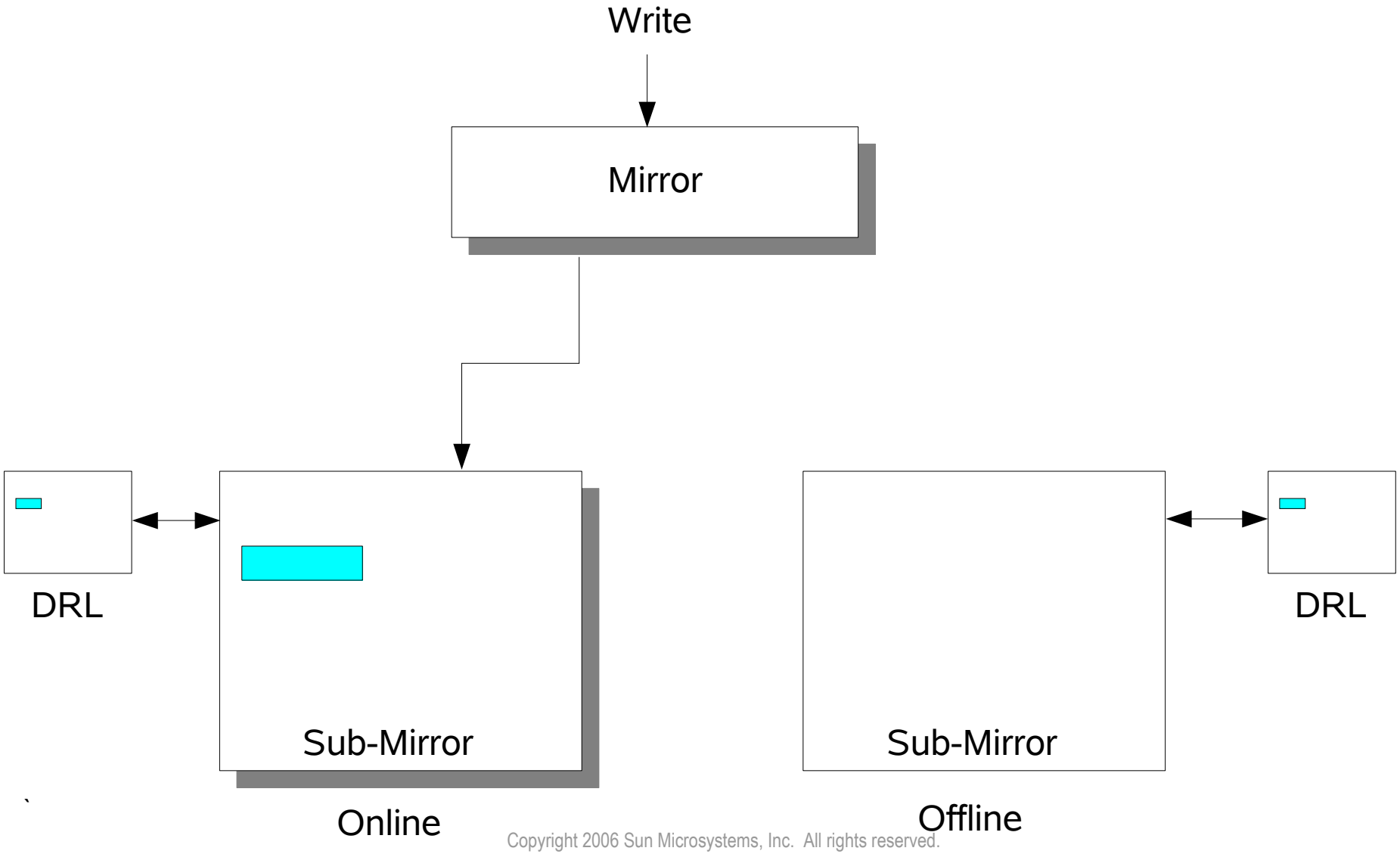
- Applies to mirrors only
  - > RAID-5's rebuild data from parity info
- Full resync
  - > Applied on metattach of new sub-mirror
  - > Complete copy of all data to new device
- Partial resync
  - > Applied to a replaced component
  - > Only copies data for that component
- Optimised resync
  - > Uses DRL to only copy changed regions

Dirty Region Logs

- DRL applies to each sub-mirror
  - > Two copies, same data in each copy
- Tracks changes that need to be applied
- Do not record any user data – only a bitmap
- Stored in the metadb's
  - > Replicated and distributed automatically
  - > Check location with “MD_DEBUG=STAT metastat”

```
Regions which are dirty: 0% (blksize 16779 num 1001)
Resync record[0]: 0 (/dev/dsk/c0t0d0s3 16 8192)
Resync record[1]: 1 (/dev/dsk/c0t0d0s3 8208 8192)
```

Dirty Region Logs



Hotspare Pools

- Pools of devices that can be used to replace failed disks
- Only apply to RAID-5 or mirror metadevices
- Pools manually associated with devices
  - > Metainit -h
  - > Metaparam -h
- Automatically inserted / removed from a metadevice
  - > On failure – insert and resync / rebuild
  - > On metareplace – remove and return to pool
- Size may be equal or greater than the failed device

Metarecover Command

- Used to recover Soft Partitions
- Can either :
  - > Scan a device for watermarks, recover SP's
  - > Re-build watermarks from metadb data
- The only supported method to rebuild SP's
  - > New watermark offsets can be changed in patches

Metaparam Command

- Used to modify device parameters
- Specifically :
  - > Add / delete hot-spares
  - > Change sub-mirror resync order
  - > Change mirror read / write options
- Cannot :
  - > Change interlace values

Configuration Re-Build

- Configs can be re-built when all metadb's are lost
- Data remains on the disks, even when metadata is lost
- Can re-scan for metasets as well

`

Configuration Re-Build

- 1. Create new metadb's to replace lost / corrupted ones
- 2. Check /etc/lvm/md.cf file
  - > Ensure that all local set devices are correct
  - > Ensure that any RAID-5 devices have '-k' flag
- 3. Copy md.cf to md.tab
- 4. Use metainit to re-create devices
- 5. Use metaimport to scan and import any metasets

`

Re-Creating RAID-5 Devices

- Metainit's '-k' flag required
- Normal metainit initialises RAID-5 devices
  - > Has to generate parity blocks
  - > Sets data blocks to zero to achieve this
  - > Will destroy any data on the disks
- '-k' flag blocks initialisation for re-creating devices

`

Recovery Lab Exercises

- Create a RAID-5, with a hot-spare
- Add some soft partitions to the RAID
  - > Create a filesystem and add some test data
- Disable one component – watch the recovery
  - > Will need some I/O to show the failure
- Metareplace the component – watch the hotspare
- Delete the metadb's and recover the config
  - > Mount the SP's filesystem and check the test data

`

SVM Maintenance