- **zfs resilver delay**: /* number of ticks to delay resilver */ Es un parámetro del kernel que usa zfs **para evitar degradar el rendimiento**.Indica los segundos que zfs espera después de cualquier zfs user io, antes de poner en cola las operaciones de io resilver.
- **zfs_resilver_min_time_ms** /* min millisecs to resilver per txg */
- **zfs_top_maxinflight = 32;** /* maximum I/Os per top-level */ maximum number of scrub I/O per top-level vdev
- **zfs_scrub_delay** /* number of ticks to delay scrub */ how many clock ticks to delay scrub operation if triggered by zfs_scan_idle
- **zfs_scan_idle** /* idle window in clock ticks */ if user I/O occurrs within this many clock ticks, delay scrub I/O by zfs_scrub_delay clock ticks

Para leerlo:

```
root@seal:/# echo "zfs_scrub_delay/D" | sudo mdb -k
zfs_scrub_delay:
zfs_scrub_delay:4
root@seal:/# echo "zfs_scan_idle/D" | sudo mdb -k
zfs_scan_idle:
zfs_scan_idle:  50

root@seal:/# echo "zfs_resilver_delay/D" | sudo mdb -k
zfs_resilver_delay:
zfs_resilver_delay:             0
root@seal:/# echo "zfs_resilver_min_time_ms/D"| mdb -k
zfs_resilver_min_time_ms:
zfs_resilver_min_time_ms:       3000
root@seal:/# echo "zfs_top_maxinflight/D" | mdb -k
zfs_top_maxinflight:
zfs_top_maxinflight:            32


Para ver todos los parametros relacionados con ZFS:

echo "::zfs_params" | mdb -k
```

Para cambiarlo:

```
echo zfs_resilver_delay/w0 | mdb -kw

echo zfs_resilver_delay/w1 | mdb -kw

echo zfs_resilver_delay/w2 | mdb -kW

echo zfs_resilver_min_time_ms/w1388 |mdb -kw
root@seal:/export/home/admin# echo zfs_resilver_min_time_ms/D | mdb -k
zfs_resilver_min_time_ms:
zfs_resilver_min_time_ms:       5000


echo zfs_top_maxinflight/w7f |mdb -kw
root@seal:/export/home/admin# echo zfs_top_maxinflight/D | mdb -k
zfs_top_maxinflight:
zfs_top_maxinflight:            127

root@seal:/export/home/admin# echo "zfs_scrub_delay/W2" | sudo mdb -kw
zfs_scrub_delay:0x4             =       0x2
root@seal:/export/home/admin# echo "zfs_scrub_delay/D" | sudo mdb -k
zfs_scrub_delay:
zfs_scrub_delay:2
```

En el caso de c3t11d0 va muy lento 534Mb/s en 24 horas hace 15%, despues del tunning 311T scanned out of 317T at 1.36G/s, 1h8m to go 1.68T resilvered, tardo 65horas en hacer el resilver de 1.70T.

?http://www.solarisinternals.com/wiki/index.php/ZFS_Evil_Tuning_Guide

?http://itservices.eng.cam.ac.uk/blogs/2015/05/zfs-resilver-tuning/

?http://broken.net/uncategorized/zfs-performance-tuning-for-scrubs-and-resilvers/

?https://utcc.utoronto.ca/~cks/space/blog/solaris/ZFSScrubSpeedNotes