Silicon Graphics, Inc.

XFS Overview & Internals
13 - Monitoring

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Monitoring

- TODO: Incorporate Dave Wright's stuff here

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Inodes

- **`watch grep inode /proc/slabinfo`**

- **`sar –v`**
  - **`TODO: Need to install`**

- **`slabtop -s c`**
  - Monitor the slab

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PCP Inode Metrics

- ig_attempts   # of looks for inode in memory
- ig_found   # of times inode found in memory
- ig_frecycle   # of fails because inode was busy
- ig_misses   # of times had to go to disk for inode
- ig_dup   # times missed but found from another
- ig_reclaims   # of times recyled the inode's memory
- ig_attrchng   # of times changed inode attributes
- iflush_count   Number of times inodes are being flushed
- icluster_flushcnt   # of times inodes clustered
- icluster_flushinode   # of times not able to inode cluster

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PCP Directory Metrics

- lookup   Number of file name directory lookups
- create   Number of directory entry creations
- remove   Number of directory entry removes
- getdents   Number of "getdent" operations

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PCP File Attribute Metrics

- attr.get   Number of "get" operations
- attr.set   Number of "set" operations
- attr.remove   Number of "remove" operations
- attr.list   Number of "list" operations

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PCP Allocation Metrics

- allocs.alloc_extent   Number of extents allocated
- allocs.alloc_block   Number of blocks allocated
- allocs.free_extent   Number of extents freed
- allocs.free_block   Number of blocks freed
- alloc_btree.lookup   Number of allocation btree lookups
- alloc_bteee.compare   # of compares in alloc btree lookup
- alloc_btree.insrec   Number of extent record inserts in btree
- alloc_btree.delrec   Number of extent record deletes in btree

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PCP Block Map Metrics

- block_map.read_ops   Number of block map reads
- block_map.write_ops   Number of block map writes
- block_map.unmap   Number of block delete operations
- block_map.add_exlist   # of extent list insertions for files
- block_map.del_exlist   # of extent list deletions
- block_map.look_exlist   # of extent list lookups
- block_map.cmp_exlist   # of extent list compares
- bmap_btree.lookup   # of block map btree lookups
- bmap_btree.compare   # of block map compares
- bmap_btree.insrec   # of block map insertions
- bmap_btree.delrec   # of block map deletions

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PCP Journaling Metrics

- transaction.syncNumber of transactions waiting to be committed
- transaction.async   Number of async transactions waiting
- transaction.empty   Transactions that did not do anything
- log.writes   Number of log buffer writes
- log.blocks   Number of log blocks written
- log.noiclogs   Log entry attempt during memory flush
- log.force   Calls to xfs_log_force
- log.force_sleep Calls to xs_log_force_sleep

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PCP AIL Metrics

- push_ail.pushes   Number of times the AIL is moved forward
- push_ail.success   Number of times sucessful
- push_ail.pushbuf   Number of times inode locked – pushbuf called
- push_ail.pinned   Number of times pinned
- push_ail.locked   Number of times locked
- push_ail.flushing   Number of times ail was flushing
- push_ail.restarts   Number of log write restarts
- push_ail.flush   Number of times a log was forced

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PCP Quota Metrics

- reclaims   Number of disk quota reclaims
- reclaims_misses   Number of disk quota reclaim misses
- dquot_dups   Number of duplicates
- cachemisses   Number of times disk quota misses cache
- cachehits   Number of times disk quota in cache
- wants   Number of times dqwants called
- shake_reclaims   Number of shaked reclaims
- inact_reclaims   Number of inactive data reclaims

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xfsstats

- xfsmisc/xfsstats.pl -f

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