



Silicon Graphics, Inc.

# **XFS Overview & Internals**

## **05 - Mount**

Presented by:

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# Mounting XFS Filesystems

- This section describes some XFS-specific mount options and how they affect the behaviour of XFS

# Mount Options

- Described in
  - In linux tree:
    - `Documentation/filesystems/xfs.txt`
    - `xfs/fs/xfs_vfsops.c`
  - `mount(8)`
- What options are specific to XFS?
- What common Linux mount options does XFS not support?

# Mount Options – Log & Realtime Devices

- TODO

# Mount Options – 64bit Inodes

- By default XFS uses 32bit inodes
  - The inode's number roughly equates to its location on disk
    - Combination of allocation group, cluster and block
  - Inode on Linux is 32bit on 32bit machines
    - May change in future kernels
  - Allocator will place 32bit inodes in the first terabyte
    - Using a larger inode size means less inodes per cluster allowing 32bit inodes to be located beyond the first terabyte
  - Inode rotor
    - TODO
- `inode64` option on 64bit machines allows inodes to span the entire filesystem
  - Allocator will try to put file extents in same allocation group as inode
  - Not all backup tools support 64bit inodes
    - Inode number used to identify file between backups

# Mount Options – Allocator Hints

# Mount Options - Stripes

# Mount Options - Recovery



# Mount Options - Barriers

- Write cache on disk can result in filesystem corruption since XFS is told the log transaction has reached the disk when in fact it is still in the disk cache.
  - A journal log assumes that the log transaction is updated on disk before the metadata is updated, but this may not be true with write caching
- XFS is able to issue write barriers if the device supports it
  - Ensures that the log entry is written before any other data
- Write barriers are enabled by default in SLES10
  - Filesystem will attempt to determine if barriers are supported and will issue a warning if they are not
  - The `nobarrier` option disables write barriers
- See
  - <http://oss.sgi.com/projects/xfs/faq.html#wcache>

# Mount Options – User/Group Quotas

# Mount Options – Project Quotas

# xfs\_info

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