

Silicon Graphics, Inc.

XFS Overview & Internals

05 - Mount

Presented by:

November 2006

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/xfstxt`
 - `xfstfs/xfstvfsops.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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