Block and inode Bitmaps

The data block bitmap tracks the usage of data blocks within the block group.

The inode bitmap records which entries in the inode table are in use.

As with most bitmaps, one bit represents the usage status of one data block or inode table entry. This implies a block group size of 8 * number_of_bytes_in_a_logical_block.

NOTE: If `BLOCK_UNINIT` is set for a given block group, various parts of the kernel and e2fsprogs code pretends that the block bitmap contains zeros (i.e. all blocks in the group are free). However, it is not necessarily the case that no blocks are in use -- if `meta_bg` is set, the bitmaps and group descriptor live inside the group. Unfortunately, ext2fs_test_block_bitmap2() will return '0' for those locations, which produces confusing debugfs output.

Inode Table

Inode tables are statically allocated at mkfs time. Each block group descriptor points to the start of the table, and the superblock records the number of inodes per group. See the section on inodes for more information.