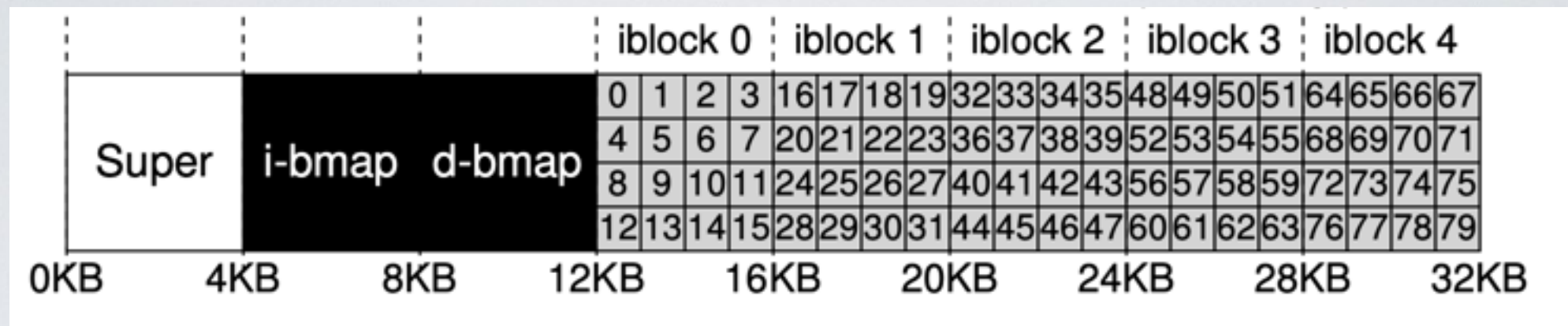
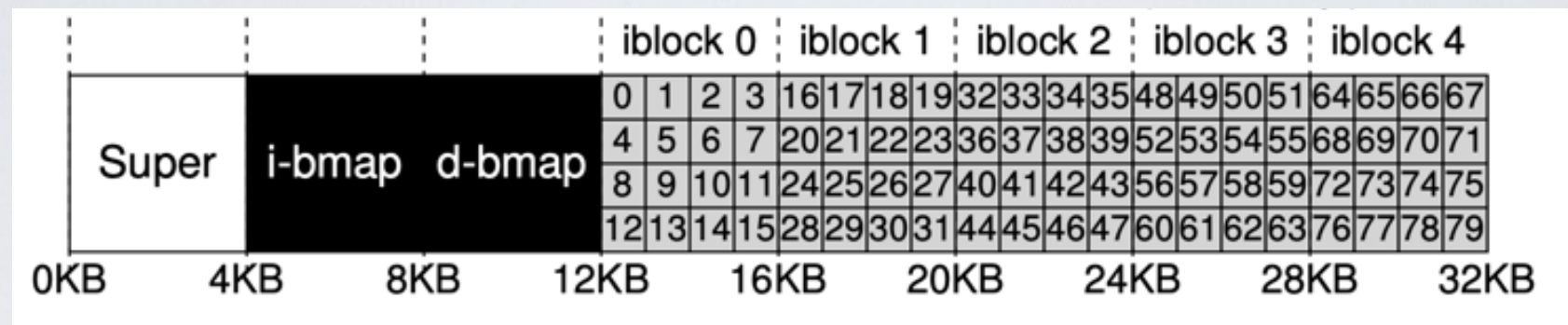


# The Inode Table



- **Physical Disk capacity in our example** (64 blocks of 4KB each)  
 $4 \times 64 = 256 \text{ KB}$
- **Logical capacity (8 blocks are reserved)**  
 $4 \times 56 = 224 \text{ KB}$  (the actual data storage space)
- **Maximum number of inodes** (each inode is 256 bytes)  
 $(5 * 4 * 1024) / 256 = 80 \text{ inodes}$  (i.e max number of files)
- **Size of the inode bitmap** (1 bit per inode)  
 $1 \times 80 \text{ inodes} = 80 \text{ bits}$  (out of 32K bits)
- **Size of the data bitmap** (1 bit per storage block)  
 $1 \text{ bit} \times 56 \text{ blocks} = 56 \text{ bits}$  (out of 32K bits, max data storage 128 MB)

# Decoding inodes



What disk sector to read to retrieve inode 32?

1. Calculate the offset (each inode is 256 bytes)  
 $32 \times 256 = 8,192$
2. Add the start of the address of the inode table (12K)  
 $8,192 + 3 \times 4 \times 1,024 = 20,480$  (20 KB)
3. Find the corresponding disk sector (each sector is 512 bytes)  
 $(20 \times 1,024) / 512 = 40$