File size with multi-level indexed files

File size using 12 direct blocks : 12 x 4 KB = 48 KB

- ➡ Adding single indirect block : (12 + 1024) x 4 KB ~ 4 MB
- ➡ Adding a double indirect block :
  (12 + 1024 + 1024^2) × 4 KB) ~ 4 GB
- ➡ Adding a triple indirect block :
  (12 + 1024 + 1024^2 + 1024^3) × 4 KB) ~ 4 TB

Rationale behind multi-level index files

- **Most files are small**
  ~2K is the most common size
- **Average file size is growing**
  Almost 200K is the average
- **Most bytes are stored in large files**
  A few big files use most of space
- **File systems contains lots of files**
  Almost 100K on average
- **File systems are roughly half full**
  Even as disks grow, file systems remain ~50% full
- **Directories are typically small**
  Many have few entries; most have 20 or fewer