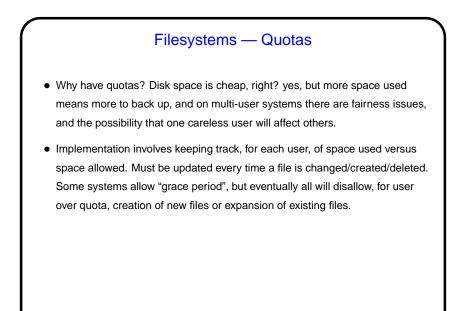
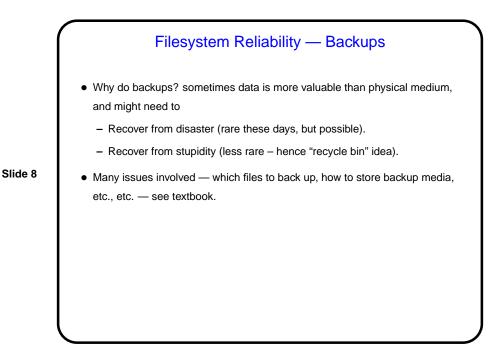
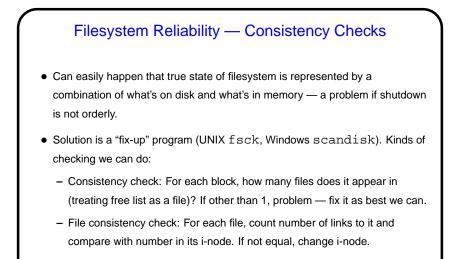


Journaling Filesystems Versus Log-Structured Filesystems

- Log-structured filesystem *everything* is written to log, and only to log. Seems like an interesting idea, but tough to implement on real systems.
- Journaling filesystem log contains only recent and pending updates.



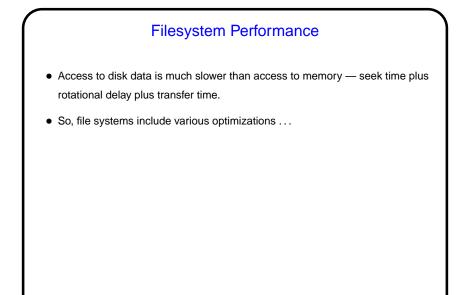


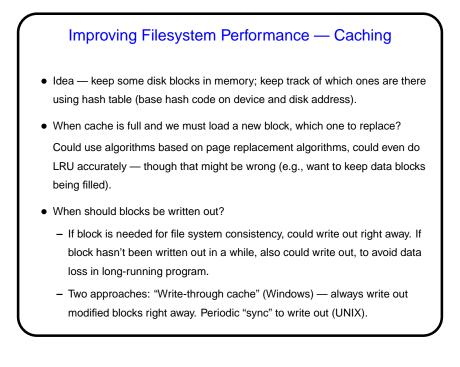


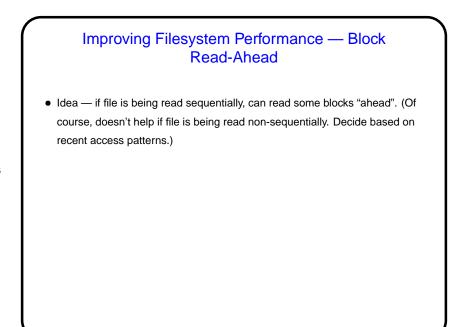
- Etc., etc. - see text.

Virtual File Systems

- Apparently many possibilities for implementing filesystem abstraction, with the usual tradeoffs. Do we have to choose one, or can different types coexist? The latter ...
- In Windows, having different filesystems on different logical drives is managed via drive letters.
- In UNIX, current approach is usually a "virtual file system" basically, an extra layer of abstraction (remember the adage about how that can solve any programming problem).
- Slide 10







Improving Filesystem Performance — Reducing Disk Arm Motion

 Group blocks for each file together — easier if bitmap is used to keep track of free space. If not grouped together — "disk fragmentation" may affect performance.

Slide 14

• If i-nodes are being used, place them so they're fast to get to (and so maybe we can read an i-node and associated file block together).

