

## \* NFS v3

### Delete fh?

- how long is a FH valid for?
- FH in v2 are "persistent". client can send an FH any time later, but if server no longer knows that FH, it'd return -ESTALE.

### V2 was a success, which brought a lot of complaints

- performance: e.g., getattr+lookup took up most of the traffic
- security
- scalability
- incompatibility with other OSs, etc.

### POSIX

- lstat(fd,offset) -> -1 on error, or 0/offset success
- read() -> -1 on err, >=0 #bytes read

### ACLs

- POSIX permissions: user, group, and other; set read/write/eXecute
- Access Control Lists: a set of users, set of groups; union, intersection, and inverse operations.

### Auth types:

- AUTH\_UNIX: client passes <uid,gid> pair to server
- AUTH\_KERBEROS: users prove their credentials to kerb. server, get back a ticket with a time limit; once ticket expires, have to get a new one, else access denied.