DFS

Distributed File Service Types

- **Upload/Download** model（P10）
- **Remote access** model（P11）

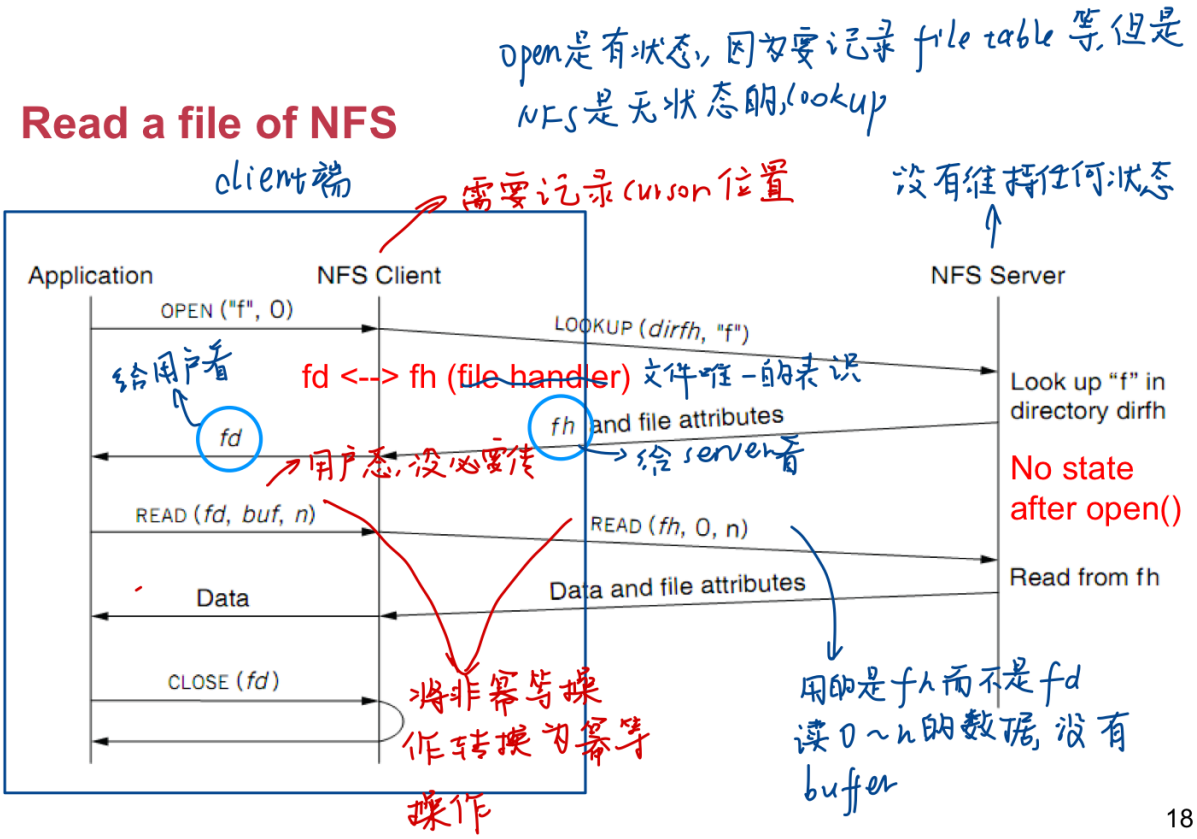
NFS: Network File System

Design Goals (by Sun, 1980s, designed for workstations)

- Any machine can be a client or a server
- Support **diskless** workstations
- **Heterogeneous** system must be supported
  - Different HW, OS, underlying file system
- Access **transparency**
  - Use remote access model
- Recovery from **failure**
  - Stateless, UDP, client retries
- High **performance**
  - Use caching and read-ahead

没有open/close

NFS Protocols：Mount/Lookup/READ/WRITRE...



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File Handler for a Client（P20）

Stateless on NFS server（P22）

- two cases:
  - **Case 1: Rename After Open**
  - **Case 2: Delete After Open**

NFS performance(P24)

- Improve by **caching**

Coherence(P26)

- **Type-1: Read/write coherence**
- **Type-2: Close-to-open consistency**

Validation (P31)

Resolve **inconsistencies** with **validation**

Improving Read Performance(P32)

- **Transfer data in large chunks**
- **Read-ahead**

Problem with NFS(P33)

GFS :*The Google File System*

GFS design goals(P37)

Design Assumptions(P38-40)

- environment
- file access

GFS interface(P41)

GFS architecture(P42、P43)

Chunks and Chunkservers职能（P45）

Master职能（P46）

Client-GFS interaction model（P47）

GFS uses one master原因（P48）

Large Chunks的好处（P49）

Reading a file in GFS的步骤（P50）

Writing a File in GFS（lec7DSM 6-8）

Naming in GFS: namespace(lec7DSM P9)

Summary

GFS 和NFS的缺点（P