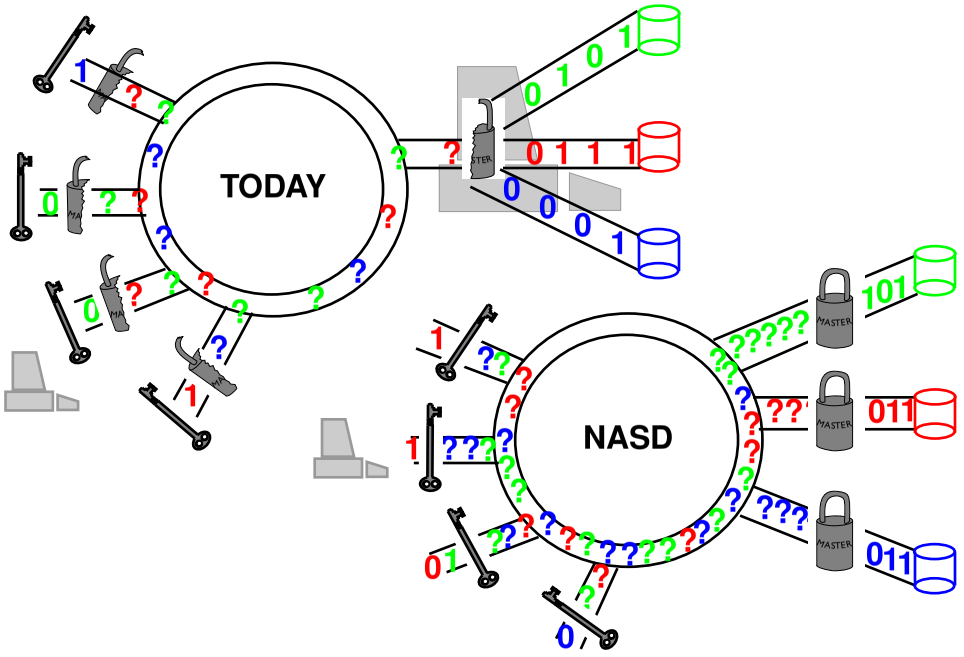
Network-Attached Secure Disks



New Ideas

- **Endow drive with lightweight, autonomous file system**
- **Enforce data security at drive, independent of users' operating systems**
- **Network-attach drives for reachability and transfer efficiency**
- **Integrate functional extensibility into drive**

Impact

- **Drive-embedded security contains data exposed to compromised client operating systems**
- **Storage management and file system functionality evolve independent of client's selected OS**
- **Improved file system performance scalability**
  - traditional servers support more clients, more disks
  - advanced services scale bandwidth through network striping
  - parallel machines need not waste nodes as disk interfaces

Schedule

1998

Multiple client file systems
Network-attached drive architecture

1997

Decentralized video server
Disk drive file system

1996

Prototype evaluation system
Security, network protocols

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