Personal Cloud Storage Services: Measurement, Analysis and Challenges

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Personal cloud storage: identifying sync inefficiency

- Personal cloud storage services are gaining popularity
- Sync inefficiency in current cloud storage services (Dropbox, Google Drive, One Drive and Seafile)
  - Methodology: network trace analysis & decryption
  - More effective dedup does not work well in high delay conditions
  - Incremental sync failure causes much more sync overhead
  - Low bandwidth utilization caused by slow start and app-level ack
- QuickSync prototype: improving sync efficiency
  - Combining storage techniques and networking techniques
  - Performance results: up to 63.4% sync time reduction
Personal cloud storage: challenges and future work

- **Challenges**
  - Usability: difficult to sync across multiple services
  - Performance: faster sync in mobile/wireless environments
  - Energy efficiency: many mobile apps are cloud-based

- **Possible solution:** standard sync protocol

- **ISS BOF on Tuesday (ROOM 502, 15:20-16:50)**
  - Standardize Internet Storage Sync
  - Welcome to our BOF!
    Our mail list: storagesync@ietf.org
    Wiki: https://github.com/iss-ietf/iss/wiki/Internet-Storage-Sync
Thank you!

Questions?