Lockr
Social Access Control for Web 2.0

Amin Tootoonchian, Kiran Gollu, Stefan Saroiu, Yashar Ganjali, Alec Wolman

University of Toronto
Microsoft Research
Huge Amounts of Personal Content

- People have tons of photos, videos, blog posts
- People need to manage their personal content
- Online sharing systems have become very popular
Sharing Personal Content is a Mess!

• Sites are **content-specific**: YouTube (videos), Flickr (photos)
  • Users’ content are scattered across the Web
• Principals and access control are often **site-specific**
• Sites often require users to **join & invite** their friends
  • Users need to reconcile their social network on each site

**Burden of content/reg. mgmt. is on end users**

**Approach: Design an access control scheme**
1. Use social relationships for access control
   • Fits people’s mental model for sharing personal content

2. Decouple social networking and content sharing
   • Users manage social network & sites provide sharing
   • Eliminate need to manage multiple social networks
   • Reuse social information across different systems

Lockr: Web 2.0 access control based on 1, 2
Lockr: Social Access Control for Web 2.0

- friend
- work
- family
- doctor
Lockr’s Two Key Abstractions

• Pass
  • Encapsulates a relationship
  • Excludes access rights, app. semantics, object names

• Social Access Control List
  • Lists relationships authorized to access content
Lockr Implementation

- Lockr users need to use a pass manager
  - LockrCenter – pass manager for Facebook users

- Lockr can be added to different systems/applications
  - BitTorrent – a plugin for Vuze (formerly Azureus)
  - Flickr – a Firefox extension + an access control server
    - Our implementation bypasses Flickr’s support
LockrCenter: Pass Manager

- Roles: storing, issuing and exchanging passes
- Facebook application
Lockr for BitTorrent

• Available as a plugin for Vuze (formerly Azureus)

• BitTorrent access control with social torrents
  • Social torrents contain social ACLs

• Protected content is exchanged only if both peers accept each others’ passes
Lockr for Flickr

- Ideal implementation needs server support
  - A browser plugin sends passes to the server
  - Server verifies passes and reveals protected content
Lockr: Social Access Control for Web 2.0

Secret URL
Lockr Makes Sharing Easy

• Same pass is valid across different systems

• Lockr eliminates redundant copies of one’s social net.

• Lockr doesn’t need a globally trusted party
  • No need for a third-party to authenticate/authorize
  • Users just need to trust content host to enforce ACLs
Conclusion

• Lockr makes sharing personal content easy
  • Lets users get rid of content/registrations mgmt. hassle

• Lockr’s design is based on two simple observations
  • Social relations should describe access control policies
  • Social networks & content sharing should be decoupled

http://www.lockr.org/
Questions?

http://www.lockr.org/
amin@cs.toronto.edu