Toward Private Cloud Storage in Public Clouds

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What Problem We Try to Address

- **User privacy**
  - To what extent, and for what services, can we keep users anonymous from clouds?

- **Existing solutions focused on**
  - (Client side) data encryption
  - Require trusted party

- **Properly address three problems**
  - User authentication
  - Payment
  - Communication
What We Propose

• Decentralized anonymous payment, authentication, and communication system (D-PAC)
• Capitalizing on recent (or not so recent) advances
  – Anonymous authentication
  – Anonymous electronic cash
  – Anonymous communications
What We Need for Experiments

• Public clouds
  – Extended to support interaction with D-PAC
• D-PAC
  – With relatively large number of supernodes
• Cloud users
  – Large number
  – Diverse capabilities in resources