

WOSS 2011

An Approach to Achieve Delegation of Sensitive RESTful Resources on Storage Cloud

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June 6, 2011

Agenda

- **What will the paper address?**
- **Existing approaches for delegation in storage cloud**
- **Proposed approach**

What will the paper address?

- Delegation of RESTful resources in storage cloud using URIs
- Multiple levels of delegation with tracking of users accessing the resources

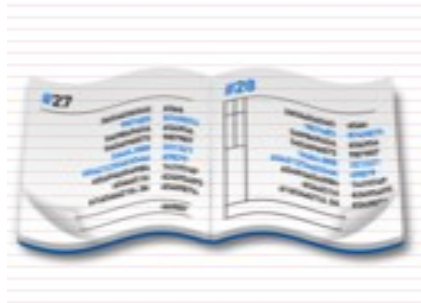
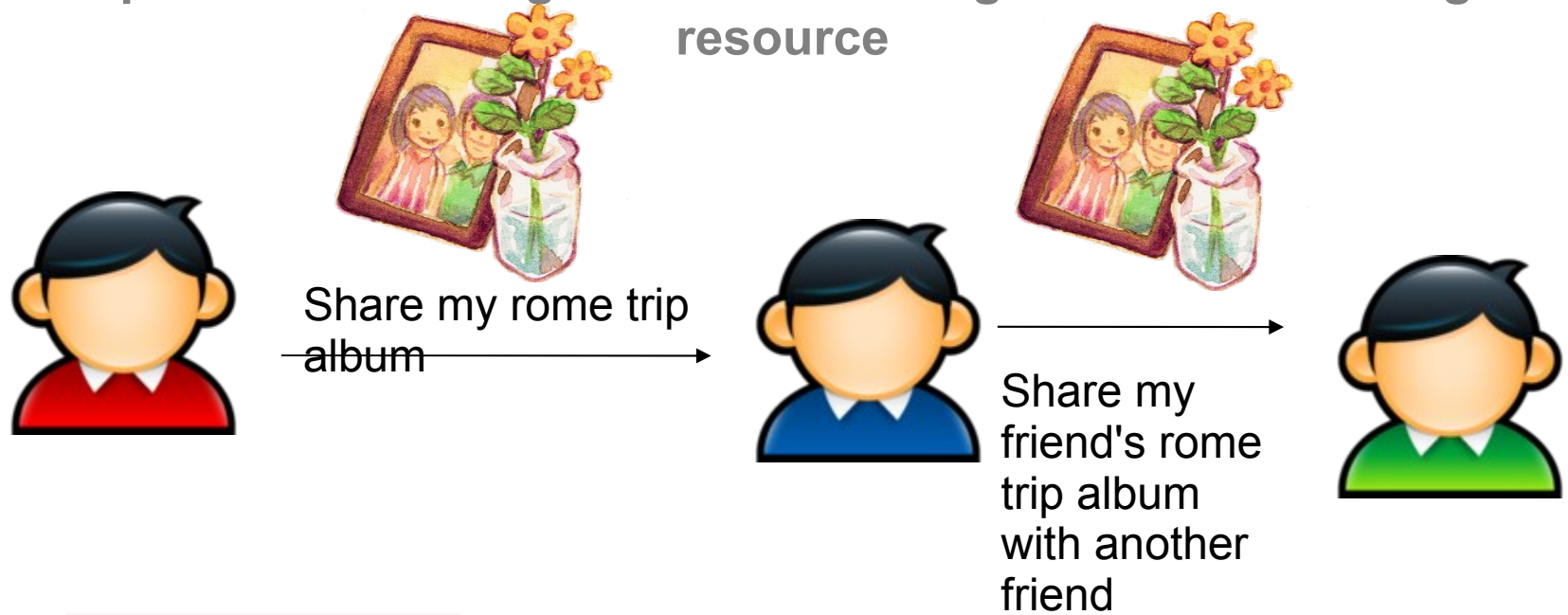
Delegation of RESTful resources in storage cloud using URIs

No state should be maintained on the server side

All information required to access a resource need to be passed in each request.

Each resource is identified by an unique URI

Multiple levels of delegation with tracking of users accessing the resource



Each user's access to the album is recorded.

Existing approaches

- Query String authentication
- Passing signed tokens containing claims
- Passing proxy certificate

Query String authentication



User creates query -

http://xxx.visioncloud.eu/my_pic.jpg?

`UserId=44CF9SAMPLE&Expires=1177363698&Signature=vjAiv4%3D`

Query contains name value pairs following the resource URI

Any user in possession of the Query can access the resource

Passing signed tokens



Tokens are subject to replay attacks

Token size can be a limitation in REST implementations

Any user who holds the token can perform the allowed operations.

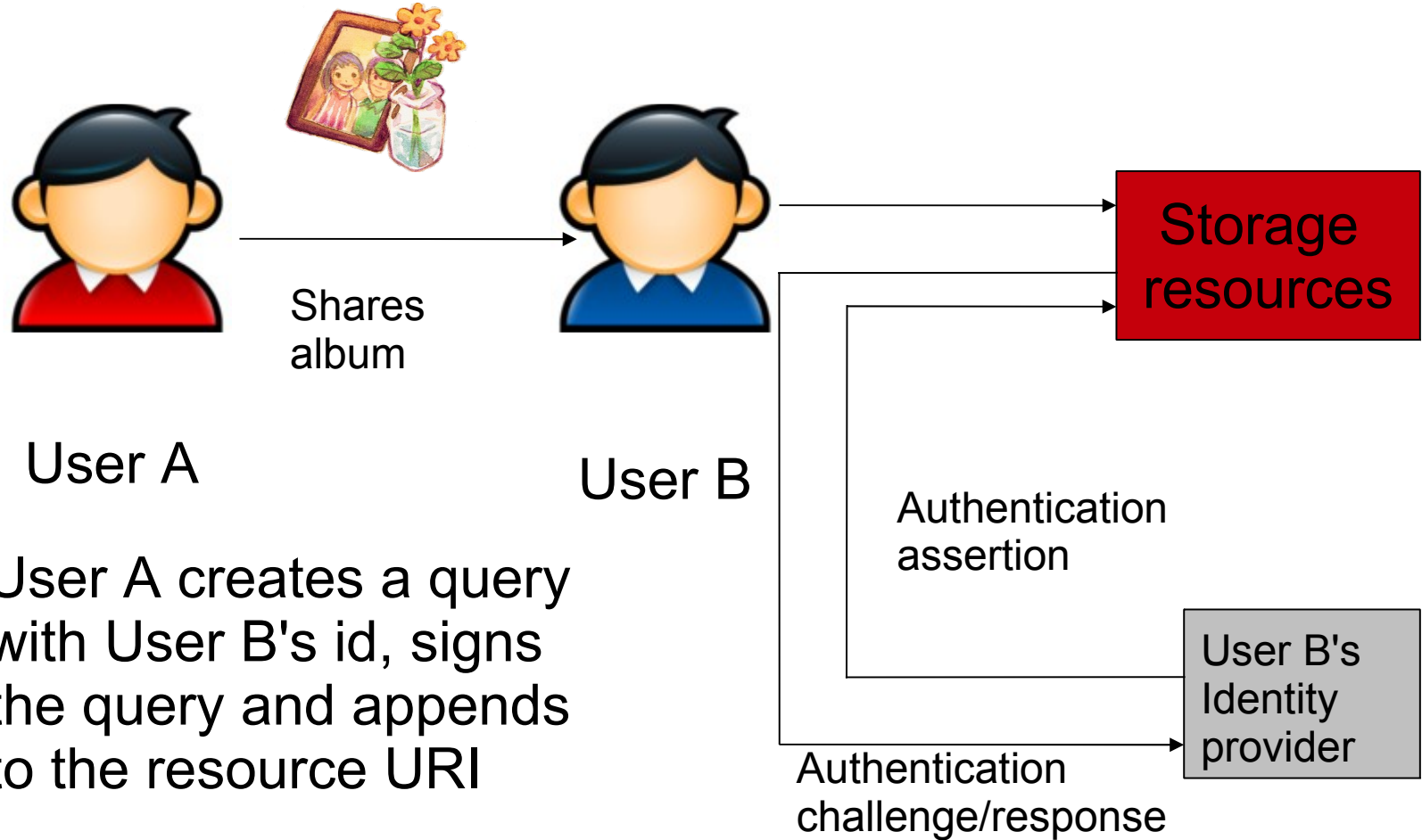
Passing proxy certificate



User creates a proxy certificate using his x509 certificate and shares with the delegated user
X509 public private certificates lead to administration overheads like renewal of certificate, revocation etc.,

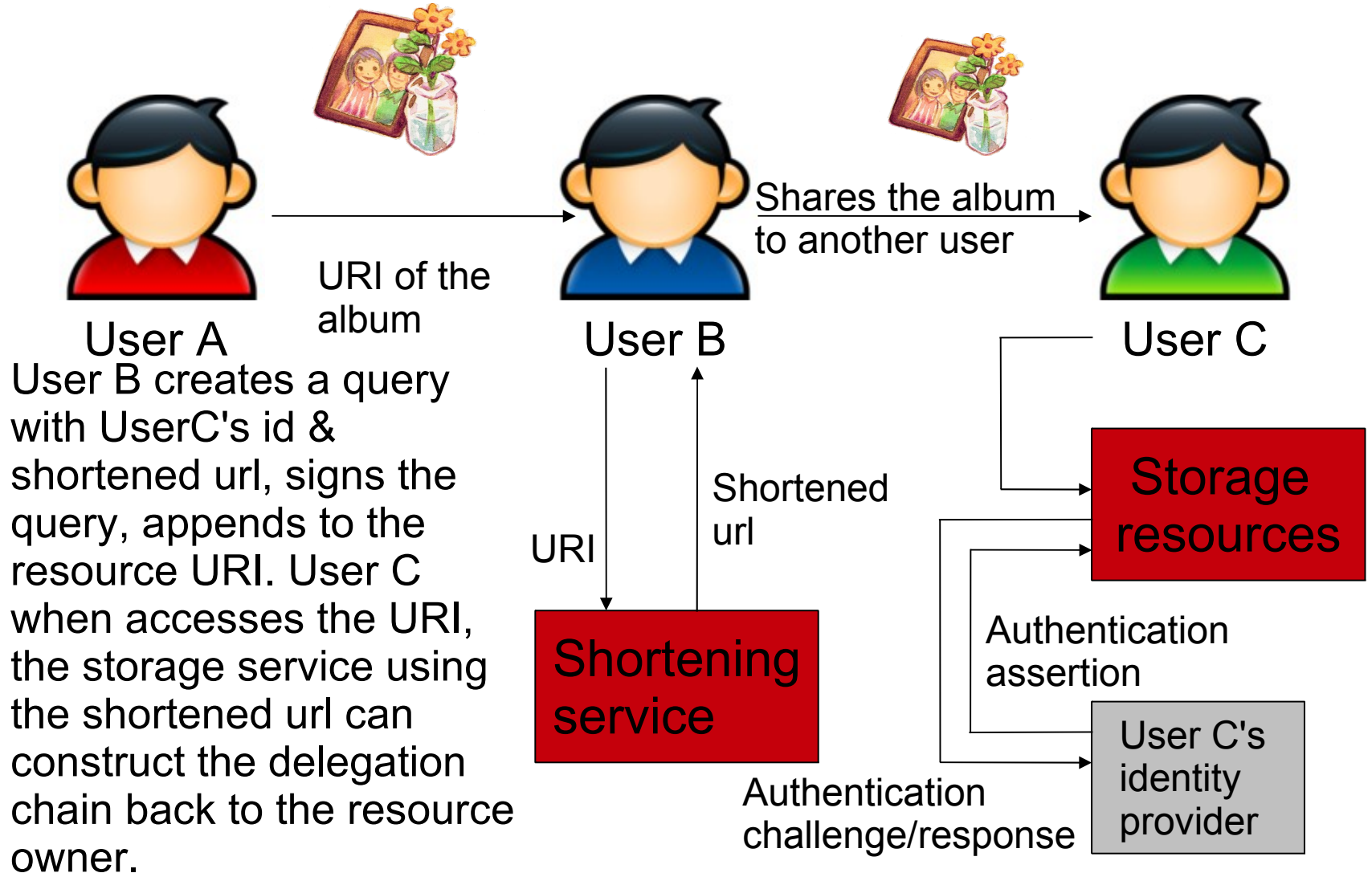
There is no constraint on the privilege level delegated. The delegated user can effectively carry out tasks on behalf of the user without any restrictions.

Proposed approach(1/2)



User A creates a query with User B's id, signs the query and appends to the resource URI

Proposed approach(2/2)



Thank you for your time, hope we made good use of it.

