draft-ietf-oauth-security-topics

Access tokens phishing

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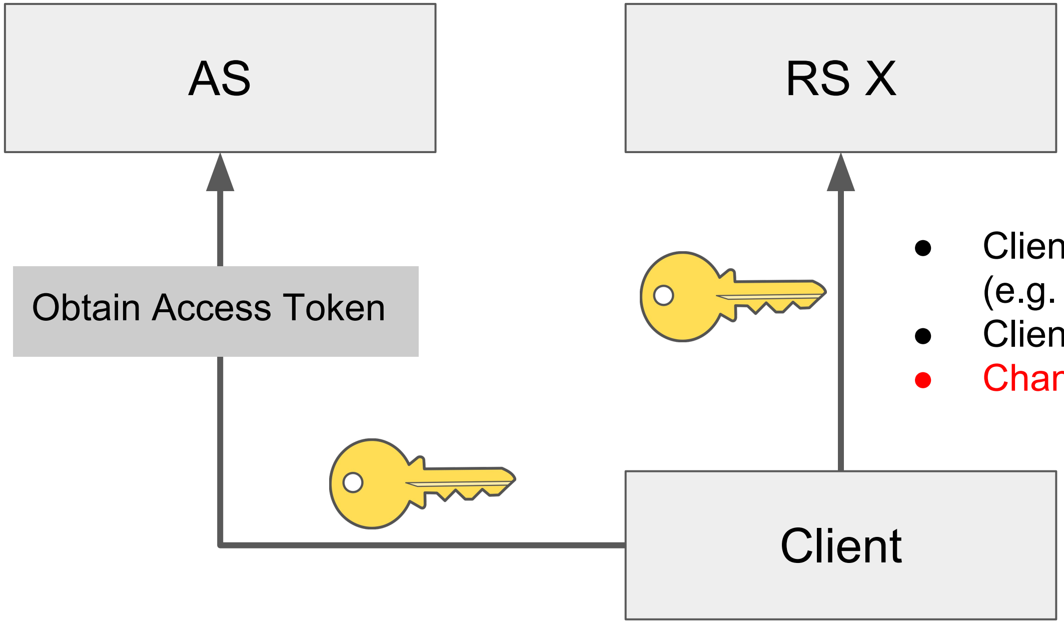
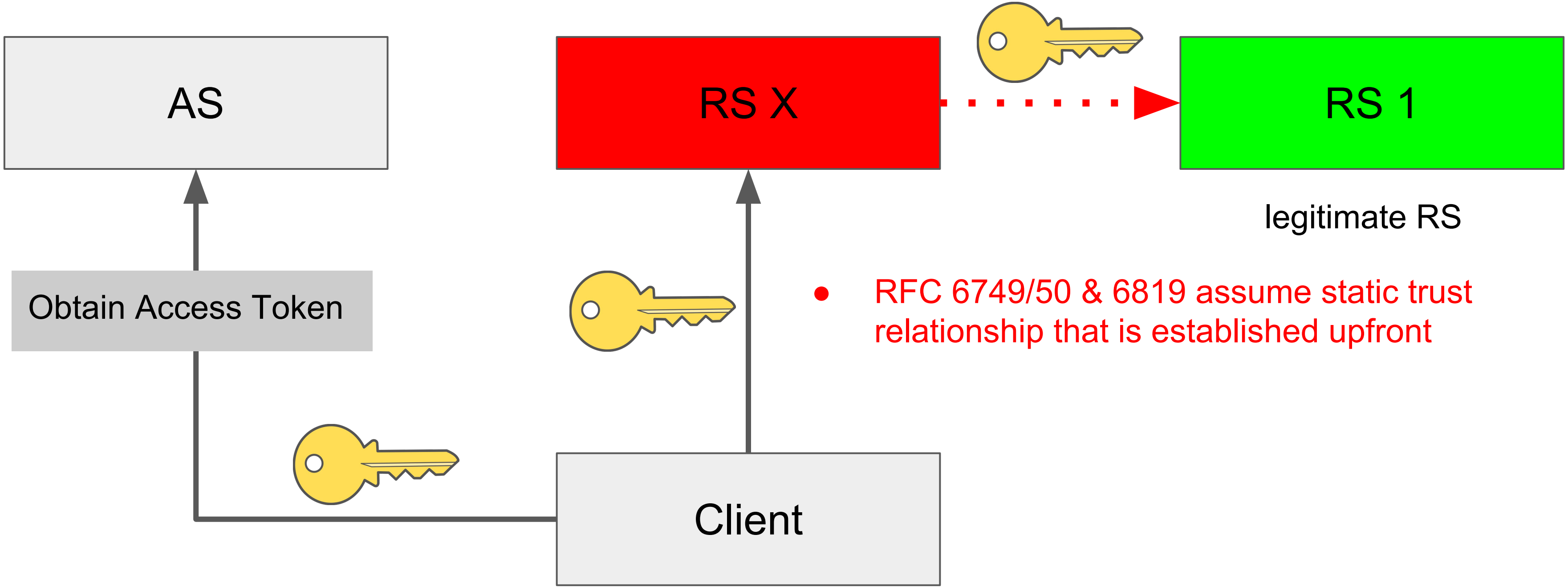
What’s the setup?



- Client wants to access RS via Standard API (e.g. e-Mail, Banking, eSignature)
- Client is configured with RS URL at runtime
- Change to OAuth trust model!

What if ...

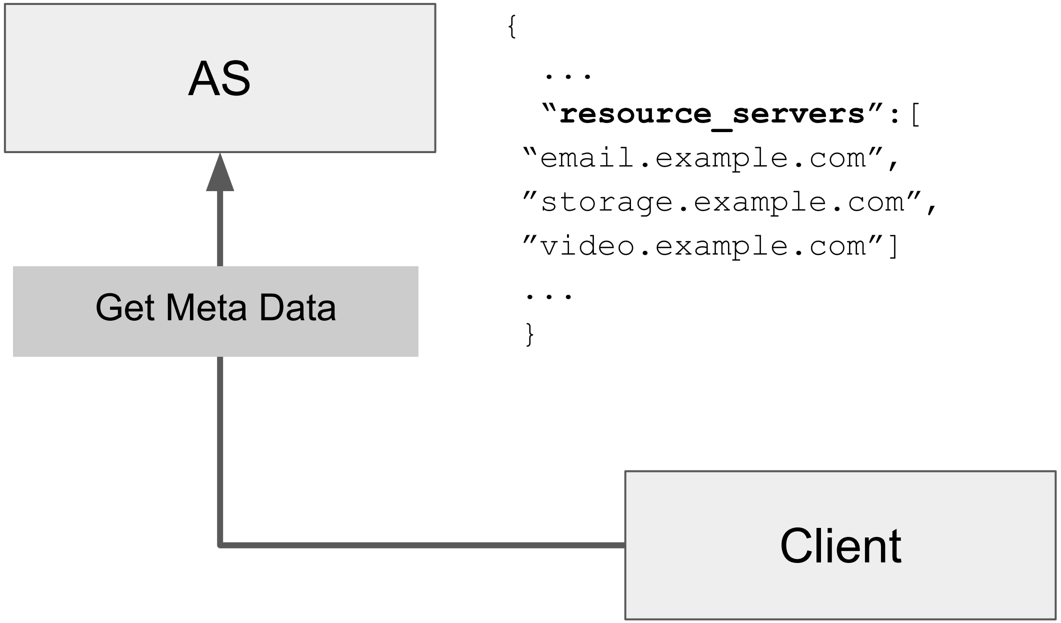
… RS X is a bad guy and impersonates the client?



- RFC 6749/50 & 6819 assume static trust relationship that is established upfront

What can we do?

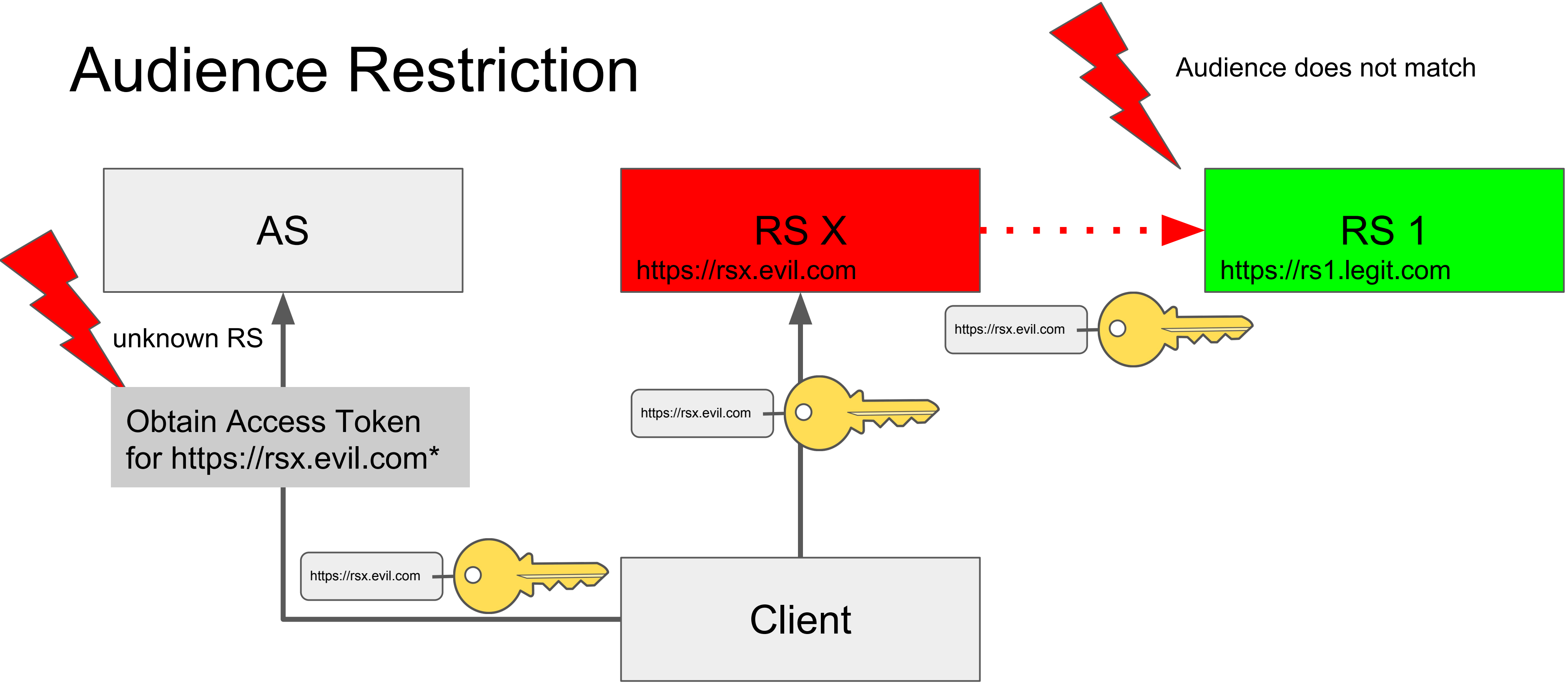
What if the client would know upfront which places it is safe to send access tokens to?



```
{
  ...
  “resource_servers”:[
 “email.example.com”,
 ”storage.example.com”,
 ”video.example.com”]
 ...
 }
```

puts the burden of security checks to clients

Audience Restriction

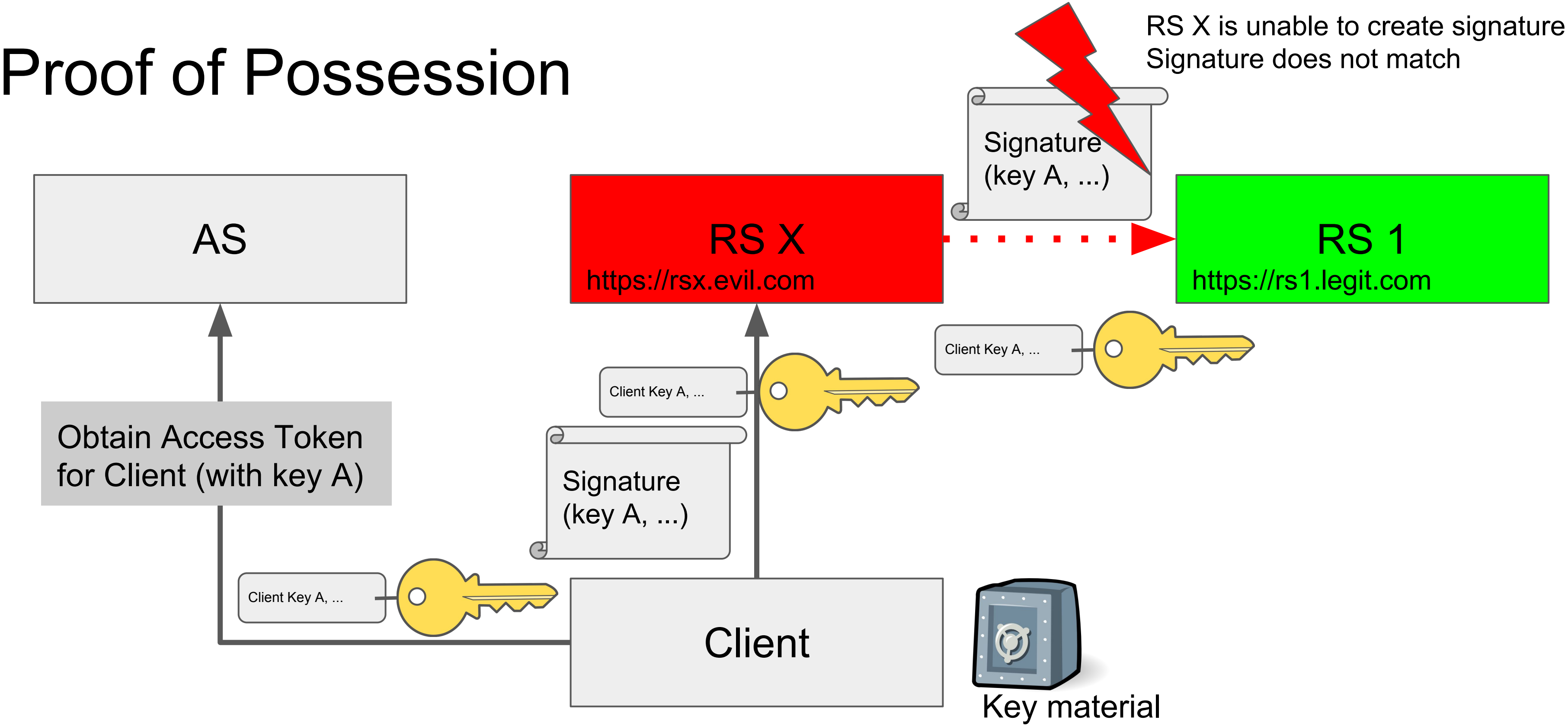


* RS URL and/or fingerprint of its TLS certificate

Audience Restriction (Options)

1. URL
   - Must be exactly the URL the client will be using for RS requests
   - May be very fine grained - application level scoping
   - AS may generalize it (needs to tell client in the token response)
2. TLS server certificate fingerprint
   - Must be taken from the TLS handshake - may require preflight request to RS
   - Would allow to detect “certificate spoofing”
   - More coarse grain than URLs (since host-based)

Proof of Possession



Proof of Possession (Existing Proposals)

- Transport
  - Token Binding - draft-ietf-oauth-token-binding
  - MTLS - draft-ietf-oauth-mtls
- Application
  - Signed Request - draft-ietf-oauth-signed-http-request
  - Jpop - draft-sakimura-oauth-jpop

What should the BCP recommend?

AS publishes legit RSs

Audience Restriction

- URL
- TLS server certificate fingerprint

Proof of Possession

- Transport
  - Token Binding
  - MTLS
- Application
  - Signed Request
  - Jpop

Something else?

Related Topics

- Access Token leakage at compromised RS
- Eavesdropping on the data center internal network