RSA CONFERENCE 2014
FEBRUARY 24 – 28 | MOSCONE CENTER | SAN FRANCISCO

Is Your Browser a User Agent or a Double Agent?

SESSION ID: **DSP-R04A**

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Agents — User, Double, and Secret

We use browsers to access sites. (Sites use our data.)

Browsers are inching towards “default secure”.

We haven’t reached “default private”. (If we even can.)

There’s a lot to fix.

Browser Security (My system)

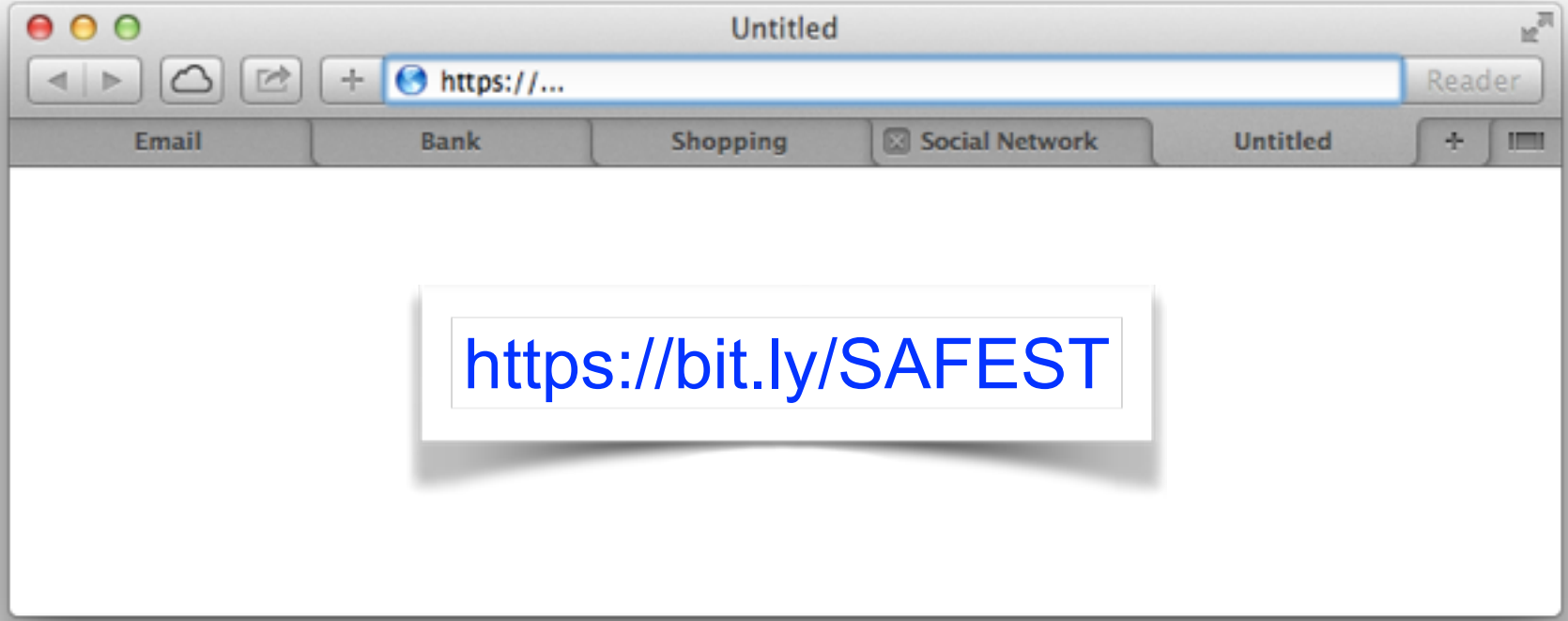
Self-update eases patch maintenance.

Process separation inhibits exploits.

SSL settings prioritize recommended protocols.

(Myself) **Data Security**

The Harry Callahan Postulate



Secure Browser, Insecure Web App

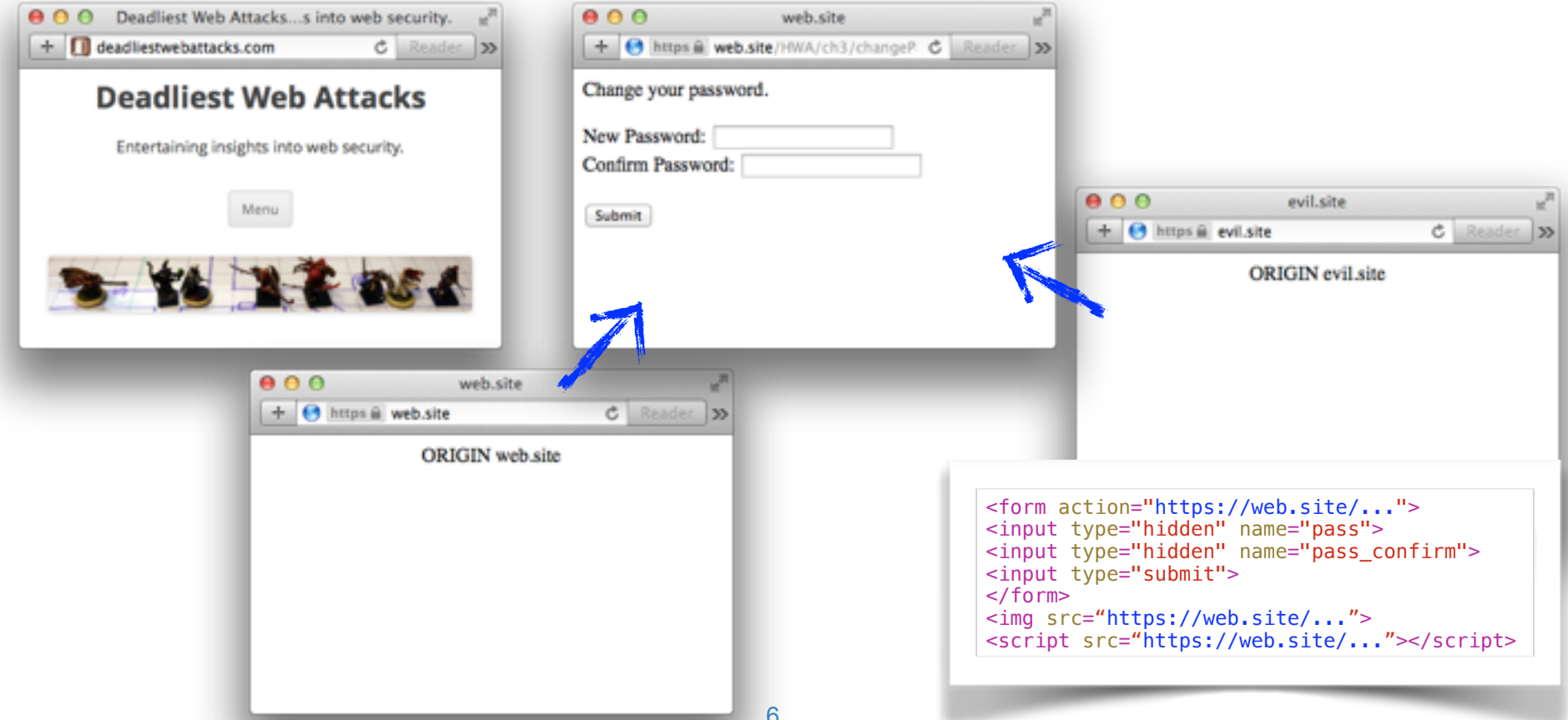
Lack of transport security — Sniffing

Unrestricted resource framing — Clickjacking

Inadequate state enforcement — CSRF

Beacons, Cookies, Likes — Privacy

Same Origin Is Only Some Isolation



Advertising Is Inherently Cross Origin

User data consumption

Malware delivery system

Intrusive content

http://bit.ly/java_ad

Resource Isolation vs. Site Isolation

HTTP Strict Transport Security

Content Security Policy

Cross Origin Resource Sharing

<iframe> sandbox

Mobile Reinvents Security Failures

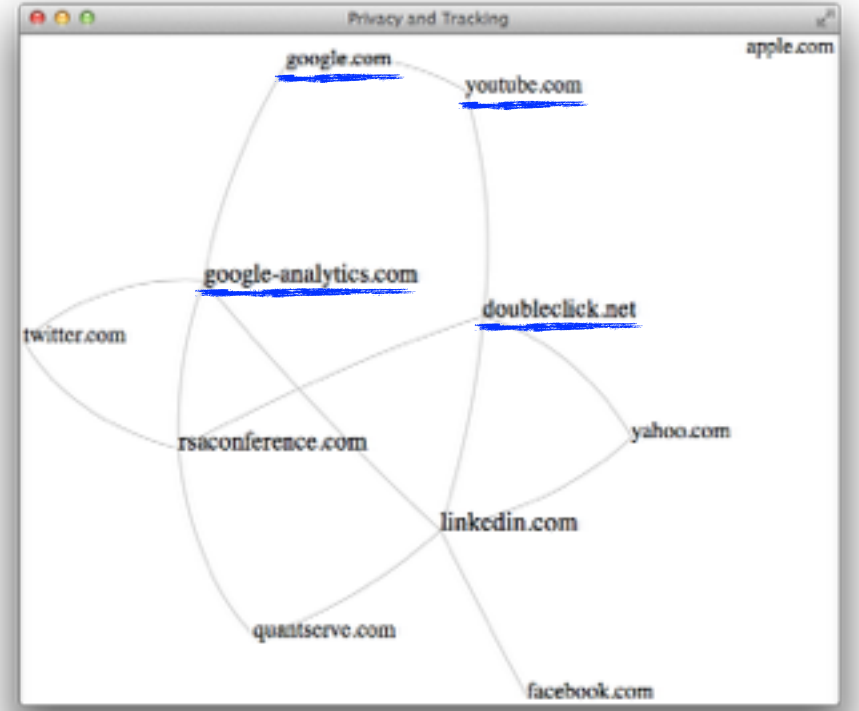
Misuse HTTPS

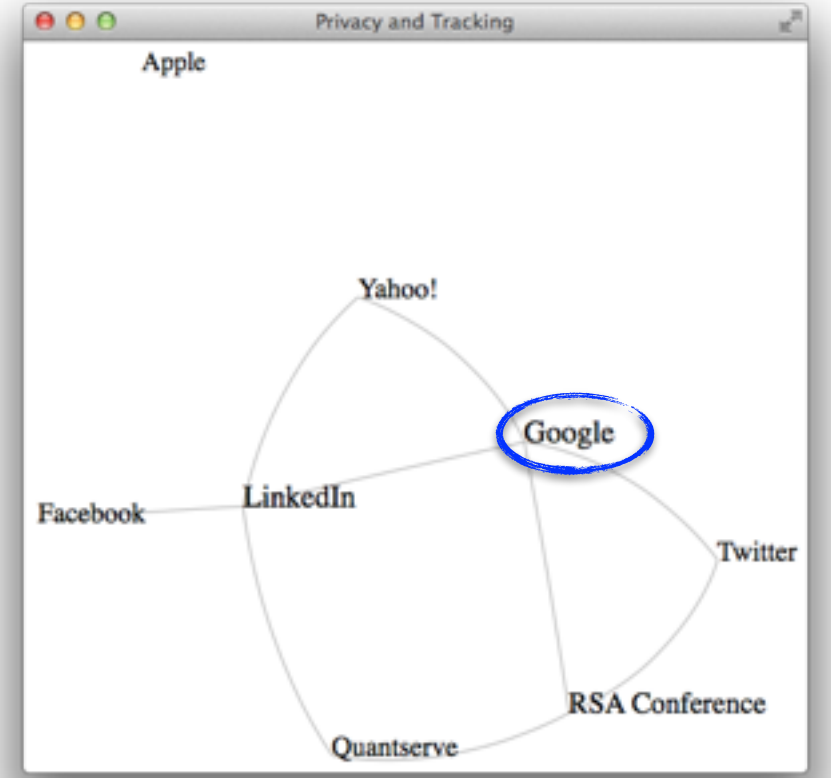
- Omit certificate validation
- (browsers have adopted certificate pinning)

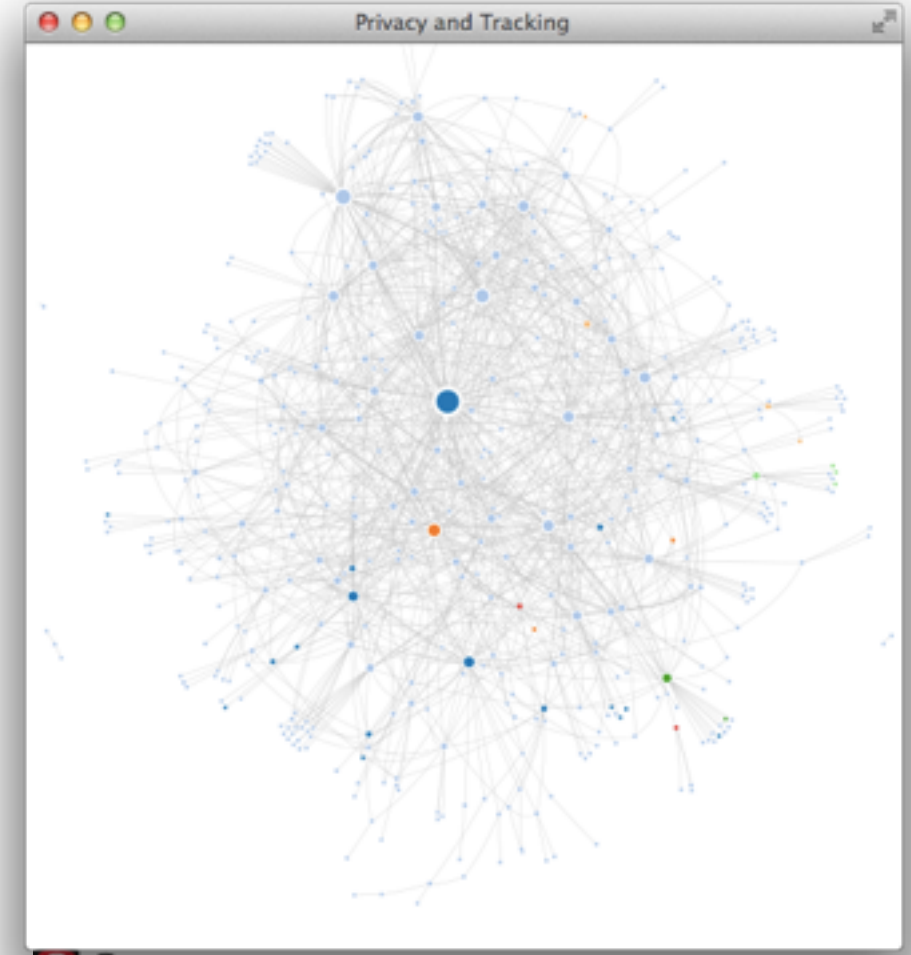
Plaintext storage on device

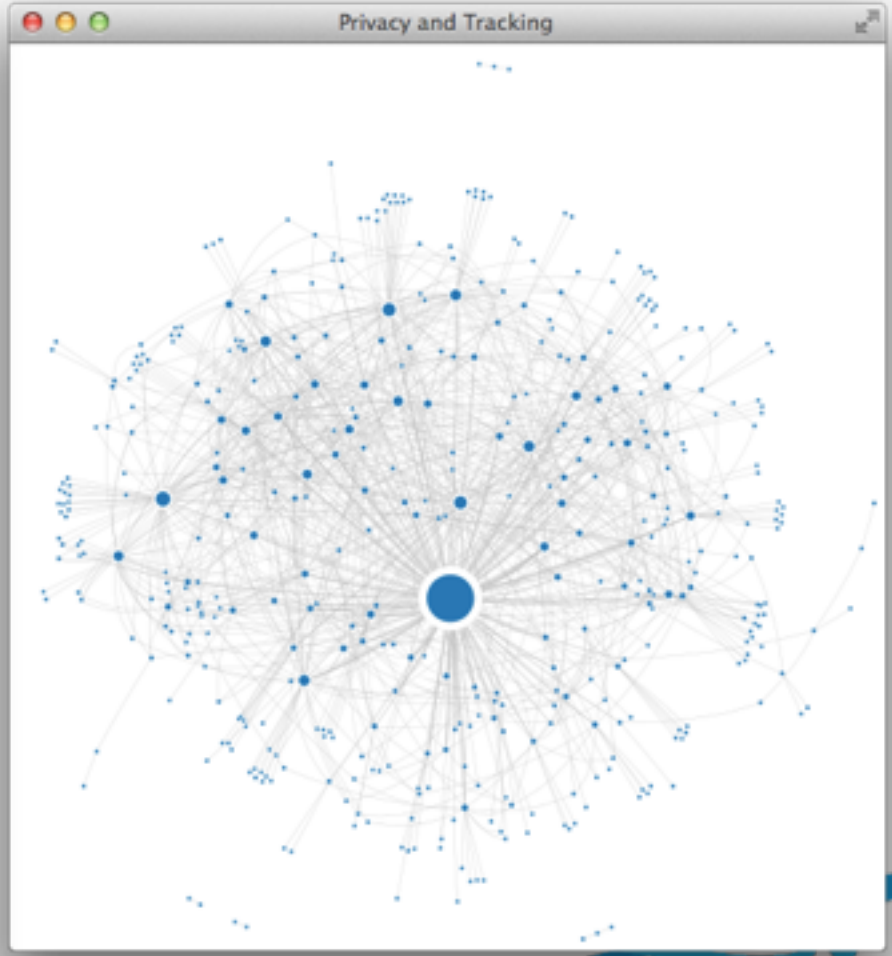
Data grabs

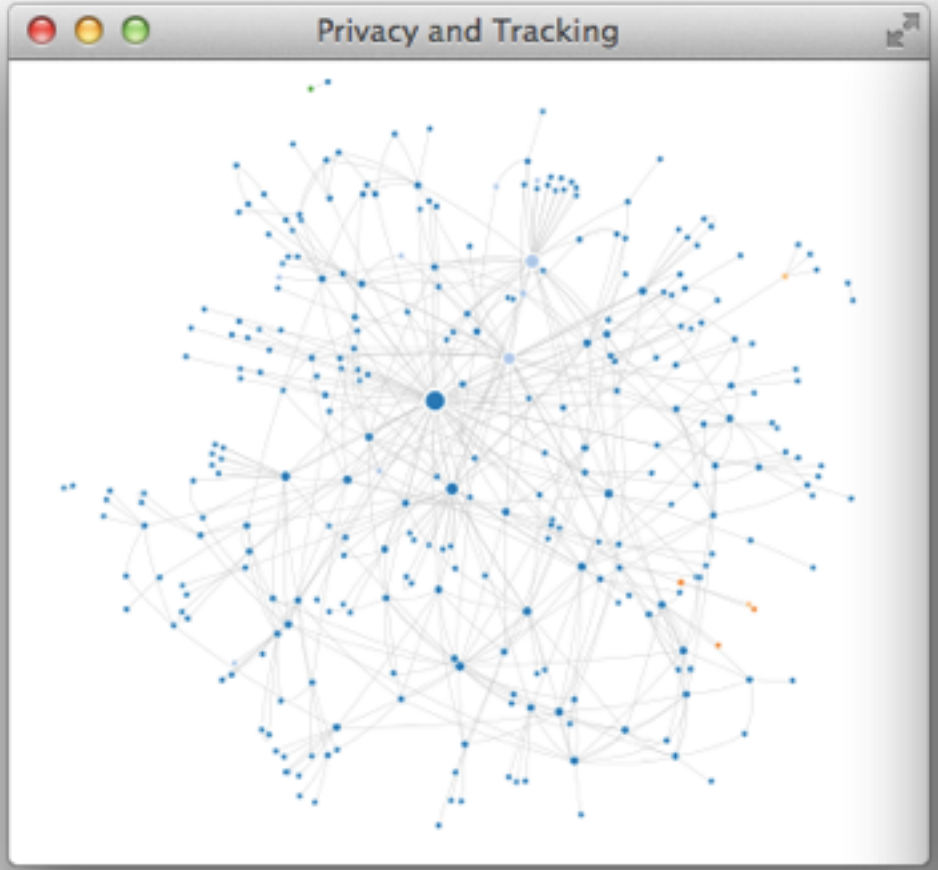
Resource Isolation, Data De-Isolation

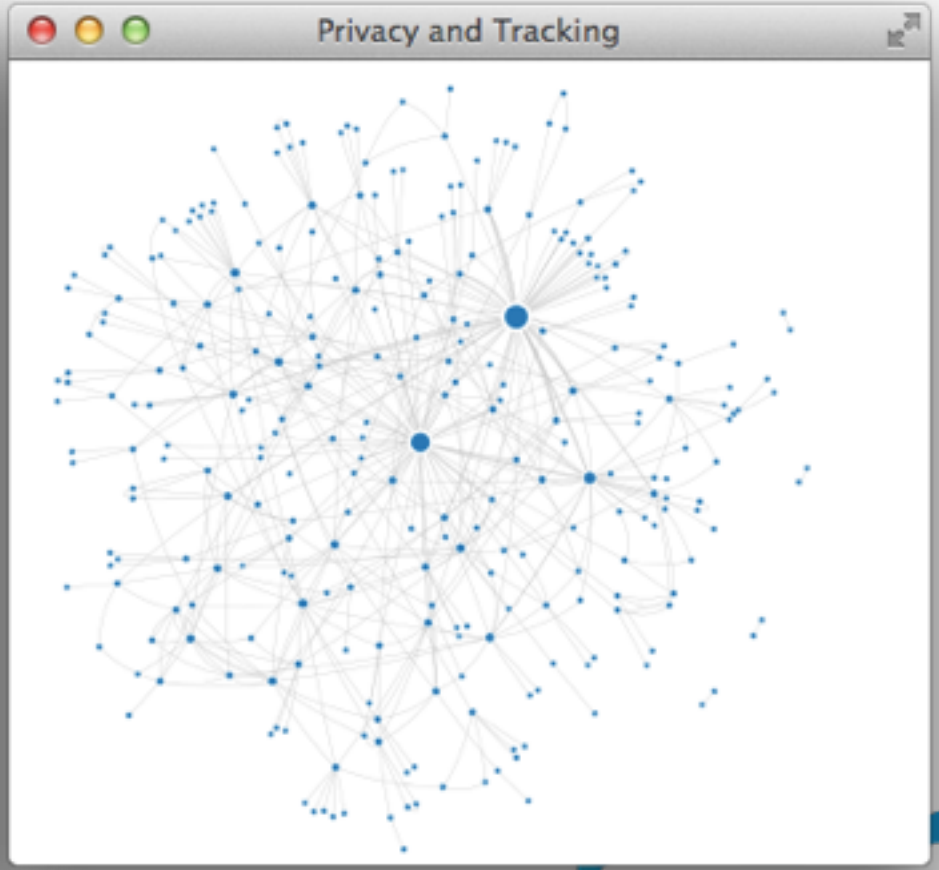





Privacy and Tracking


Privacy and Tracking


Privacy and Tracking


Privacy and Tracking

Data Isolation and Constellations

Passwords

Personal info

Sensitive info

The threats of aggregation

[More Graph Demos]

Mobile and Browser Privacy

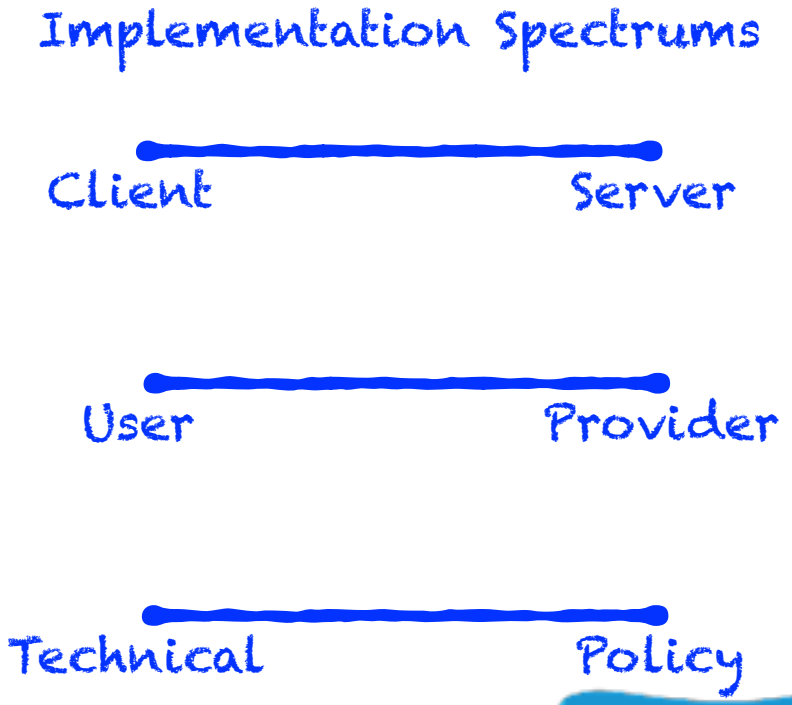
Personas

Protection

Penalties

Persistence

Pollution



Bring the User Agent Back to Users

Default deny third-party cookies

- Same Origin Policy isn't a privacy barrier

Identity management

"Context Vaults" — Tab-specific isolation

- Cookie Jar, Web Storage API, plugins, …

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Thank You!

References

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http://www.mozilla.org/en-US/lightbeam/
https://github.com/mozilla/lightbeam

Latest slides at http://deadliestwebattacks.com