The Need For a Coherent Web Security Policy Framework

Or

Why Frankenstein's Monster Can't Rule The Wild West

Jeff Hodges

Andy Steingruebl

The Current State of the Web

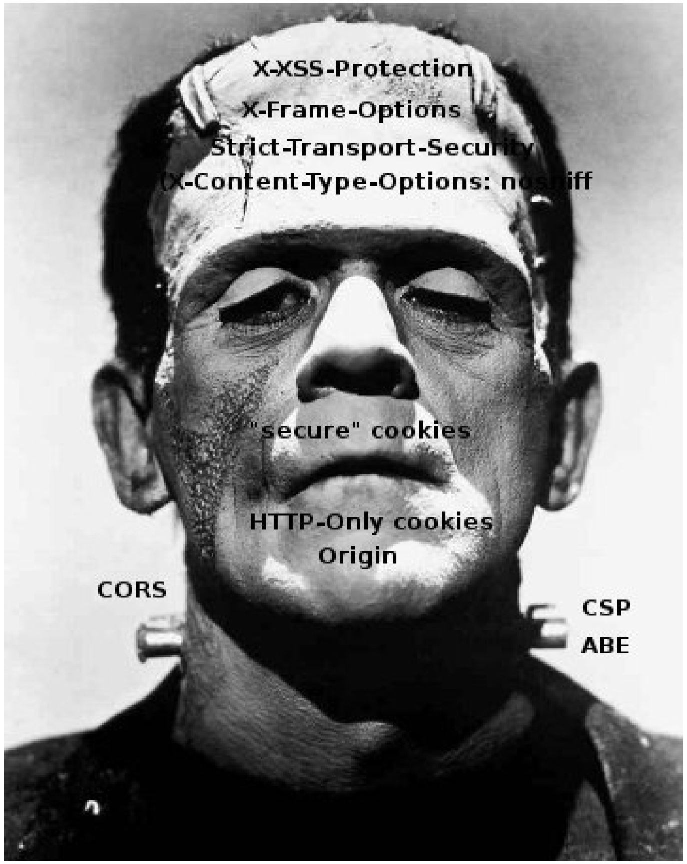
- Current system has evolved rather than been designed

Web Apps' vulnerabilities / attacks

- Cross-Site-Request Forgery (CSRF)
- Content-sniffing cross-site-scripting (XSS)
- Attacks against browsers supporting anti-XSS policies
- Clickjacking
- Malvertising
- man-in-the-middle (MITM) attacks against “secure” sites

Current Security Policies Sprinkled All Over the Web

- HTTP Headers
  - Strict-Transport-Security
  - No-Sniff
  - X-Frame-Options
- Cookies
  - Secure, HTTPonly
- Meta Tags
  - Content-Type



We’d Rather Have This

http://upload.wikimedia.org/wikipedia/commons/3/33/Golden_gate2-2.jpg

We Need A Policy Framework

- The right way to set policy is via *configurable* declaration, **not** (hard) code
- Current policy mechanisms require every developer to do the right thing every time. *(This is the wrong way to do it)*
  - Set Secure and HTTPonly Flag on Cookies
  - Set Content-Encoding
  - Set Scheme to HTTPS for all links

We aren't Innocent

The authors of this preso helped create
Strict-Transport-Security

…. Behind our shining armour of righteous indignation lurks a convicted and only half-repentant sinner ….

- Jane Harrison

Individual I-Ds in IETF – hasmat wg ?

- HSTS – HTTP Strict Transport Security
  - draft-hodges-strict-transport-sec
- Origin definition and explicit header
  - draft-abarth-origin
- Content sniffing rules
  - draft-abarth-mime-sniff

Work in W3C

- Creation of “Web Application Security WG” is proposed
  - Draft Charter circulating
  - Sent to hasmat@ list by Thomas Roessler
  - CORS and UMP
    - Cross Origin Resource Sharing
    - Unified Messaging
  - CSP – Content Security Policy
    - Developed by Mozilla folk
    - In Firefox 4

Questions?

Jeff.Hodges@paypal.com
asteingruebl@paypal.com