Current Hostname Practice Considered Harmful

draft-huitema-privsec-harmfulname-00

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Connection ➔ Leaking meta data!

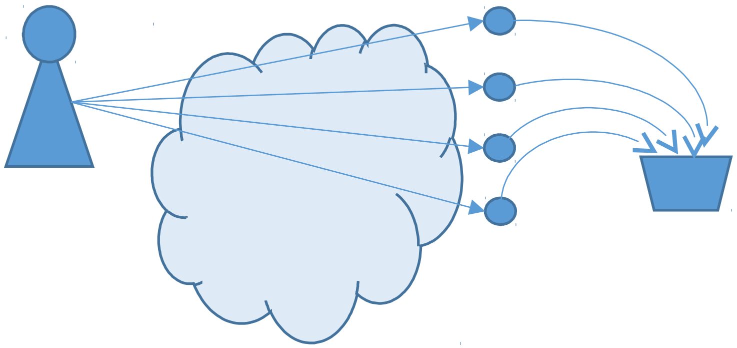
- Wi-Fi:
  - Leaks the MAC Address – fixed by randomization
- DHCP
  - Leaks unique ID, host name, FQDN – fixed by anonymity profile
- IPv6
  - Unique IIDs enable tracking – work in progress in 6MAN
- DNS
  - Look for many names for “background services” – fixed by DPRIVE
- MDNS, LLMNR
  - Hello, is there someone out there with name = “my name” ?
  - NOT FIXED
- And probably many more, using **Host Name** in discovery, pairing

Host Name Practice Considered Harmful

- Names are defined for a specific context but used everywhere
- Three common practices
  - “BrandX-123456-7890-abcdef” – unique ID
  - “huitema-laptop” – pretty good partial identifier
  - “rosebud” – reduces search space by factor 1000 or more
- If we randomize the names “per connection,” we stop (many of) the leaks
- But this is an interesting “platform change.”

Why is it important?

- Little pieces of information go in “tracking buckets”



- Soon enough, records for
  - MAC Addresses
  - IP address & date time
  - Email address
  - Cookies
  - Traffic pattern
- After that, tracking from “partial identifiers” works very well!

Example of disclosure in DNS-SD

- Publish a service, name chosen by the user. (Fine)
- Wait for requests from potential users. (Fine)
- Respond with service advertisement. (Fine)
- Publish hostname of the laptop in the advertisement.
  - So the client can do a name to address lookup.
- Issues:
  - The user is conscious of publishing the service name, not the host name
  - The host name can be harvested by third parties
- Could we use some “anonymous name” instead?

Request to the INT Area: scrub the meta-data

- Dave and Christian cannot look at everything, need your help
- Look for the following patterns
  - Gratuitous messages sent just in case
  - Sticking names in headers because it helps management
  - Derive device names from user names
- Propose updates
  - Send messages exactly when needed
  - Scrub the messages, apply data minimization
  - Use short lived anonymous name when possible
  - Do not disclose PII in host names