Privacy Extensions for DNS-SD

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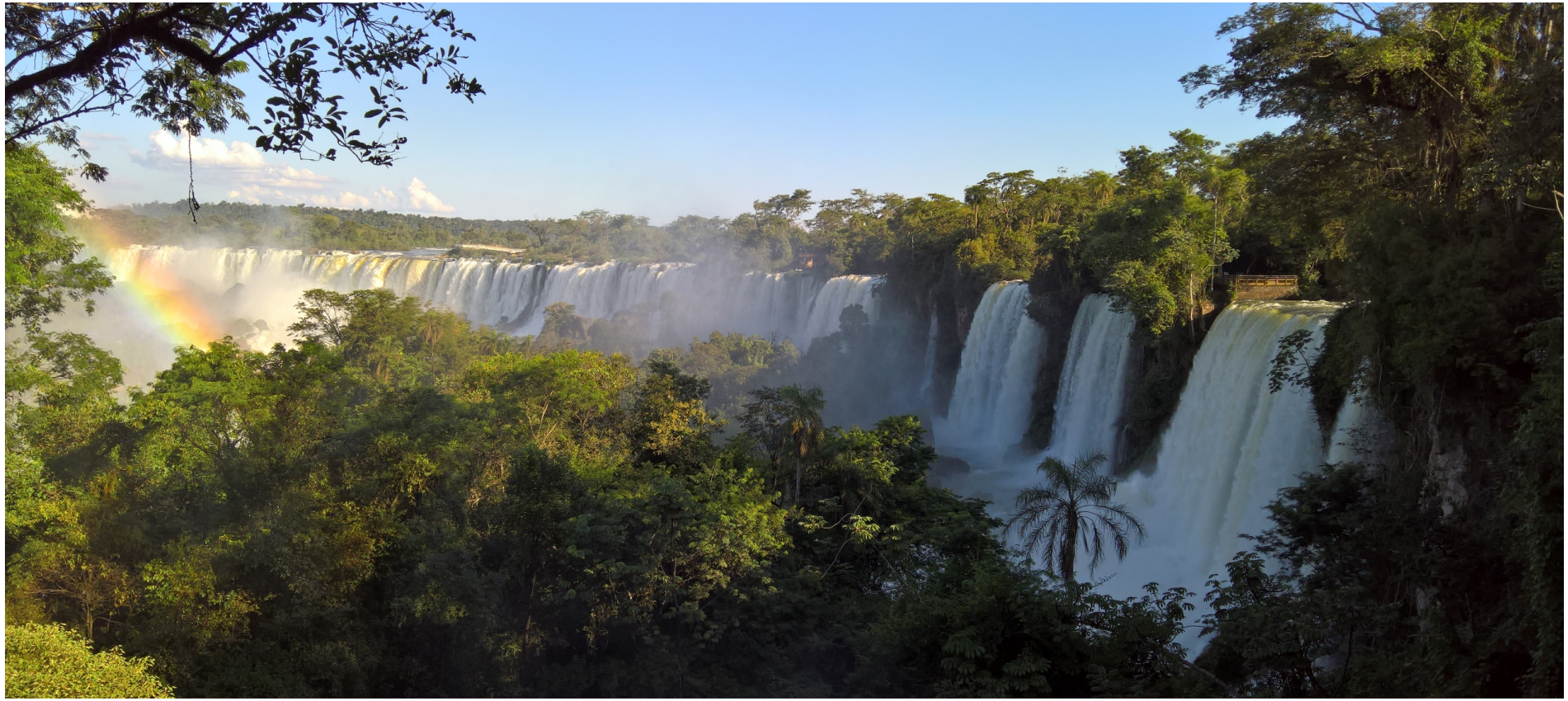
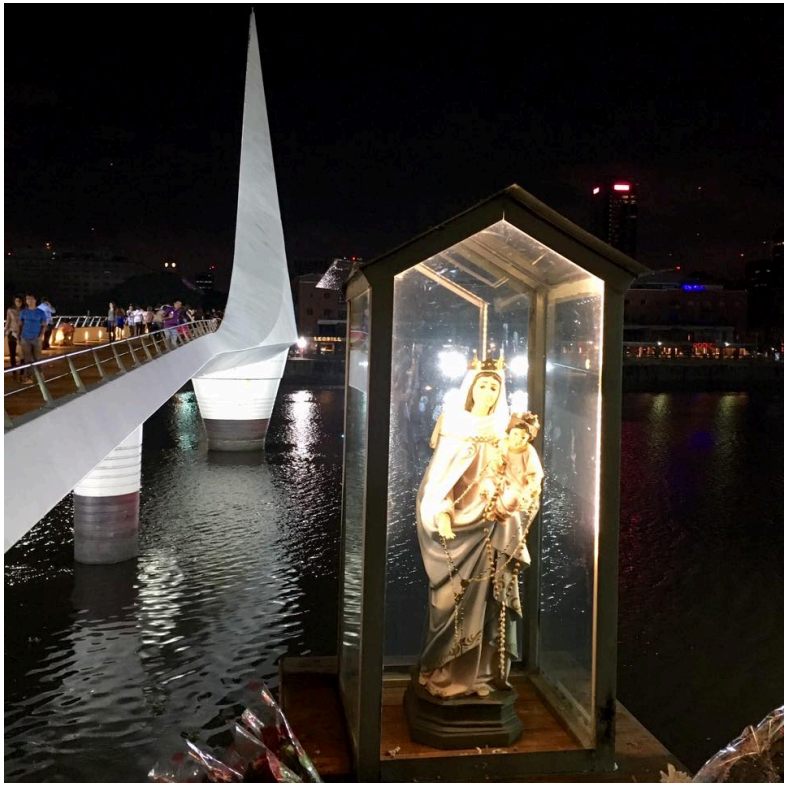
Privacy: stem the flow of metadata



Don’t feed the critters

- MAC Addresses (Randomization)
- DHCP parameters (Anonymity)
- DNS Traffic (DNS Privacy)
- MDNS
  - Host name
- DNS-SD
  - Service name
  - Host name

DNS Privacy is not enough



- D-Prive, DNS over TLS
  - Protect privacy of requests
  - Relies on trusted resolver
- DNS-SD issues:
  - Publishes A/AAAA record for name
  - Publishes service name at location
- DNS Privacy does not protect publisher

Proposed solution: obfuscation

- Publish random name with MDNS
  - Defeats tracking by host name
  - No impact on “list picker” interface
- Publish obfuscated service name
  - <base64_seed> "." <base64_hash>
- Publish Instance/Key pairs to friends (similar to Bluetooth)
  - Instance = “Alice’s Picture Store”
  - Key = EF0123456DEADBEEF
- Friends can discover the service

This is V0, there are issues

- Key distribution
  - Probably OK in single owner “laptop to phone” scenario
  - Could use process similar to Bluetooth
- Goobledygook
  - Non friends see strange looking strings in “list picker”
- DOS Attack
  - Publish lots of goobledygook, force lots of computation by discoverers

Discuss?