

Naming Things

With bits of draft amsuess-t2trg-onion-coap, draft amsuess-core-coap-over-gatt and draft amsuess-t2trg-rdlink

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The naming of things is a difficult matter

We have a uniform way of doing this: URIs.

URIs name resources on things. The authority component names (an aspect of) the thing. The scheme names how to reach it.¹

¹This might be controversial, and while I'm happy to *have* the discussion, I didn't prepare anything for it. ↻ 🔍 ↺

What have scheme and authority ever done for us?

by example of web browser URIs

- 1 Tell us how to reach the service: `https://example.com`
- 2 Tell us where to reach the service: `https://example.com` being resolved through whatever the system's resolver gives²
- 3 Tell us how to verify whom to talk to: `https://example.com` through the browser PKI
- 4 Provides identity: `https://example.com/page1` can be compared to an archived version

²OK it's DNS, and maps to an IPv4 or IPv6 address)

But it's never that simple

even in the browser

- 1 Tell us how to reach the service: ... but later we go h2/3
 - ▶ ... but DNS resolution may provide hints for that (?)
- 2 Tell us where to reach the service: ... `http://i2pwiki.i2p`
intentionally does not resolve
- 3 Tell us how to verify whom to talk to: ... `https://[fc00:db8:1]`
needs extra knowledge
- 4 Provides identity: ... `https://[fe80::1%eth0]` better not be compared across hosts

In Constrained RESTful environments

- `coap+uart://ttyUSB0` provides “how”, “where” and even some trust, but no identity. ([draft bormann-t2trg-slipmux](#))
- `coap+gatt://001122334455.ble.arpa` (based on BLE MAC address) provides “how”, “where”, identity, but no trust ([draft amsuess-core-coap-over-gatt](#))
- `coap://nbswy3dpo5xxe3denbswy3dpo5xxe3de.ab.rdlink.arpa` provides identity and trust, and relies on a protocol specific to `.rdlink.arpa` to provide a “where”, which can also provide an alternative “how”.
- The “how” is not absolutely critical – proxies don’t break trust.

Advancing the topic

Open discussion