Outcome and outlook of the Friday T2TRG meeting

draft-core-transport-indication, draft-amsuess-coap-over-gatt,
draft-core-resource-directory-extensions, draft-t2trg-onion-coap
... all about Naming Things

Christian Amsüss

IETF118 Prague, CoRE, 2023-11-09
Orientation

**Origin:** RFC 8323 introducing coap+tcp://

**led to:** draft silverajan-core-coap-protocol-negotiation (stalled)

**used by:**
- draft bormann-t2trg-slipmux (coap+uart://)
- draft amsuess-core-coap-over-gatt (coap+gatt://)
- draft becker-core-coap-sms-gprs (coap+sms://)

**reboot:** draft ietf-core-transport-indication – rel=has-proxy

**more users:**
- draft amsuess-t2trg-rdlink
- draft amsuess-t2trg-onion-coap (both coap://encodedpublicickey.tbd.arpa)

T2TRG meeting on Friday
Do we really need coap+foo?

Ambiguous: coap://[2001:db8::1]:1234/

TCP port? UDP port?

Clarified: coap+tcp://[2001:db8::1]:1234/

Unambiguous:
- coap://0123456789ab.ble.arpa/ (was coap+ble://…)
- coap://7.6.5.4.3.2.1.5.5.5.3.4.e164.arpa/ (was coap+sms://+43555…)
- coap://ttyUSB0.uart.tbdlocal.arpa/
- coap://001.004.usb.tbdlocal.arpa/

Criterion: coap+foo needed if the literal for of authority values are ambiguous with respect to transports. Or if the resolution process produces such values.

1 Or ttyUSB0.alt?
Proposal to update transport-indication

- Recommend not adding coap+x schemes unless criterion is met.

Doesn't this create aliasing?

No. It's only aliasing when different URIs point to the same resource. Whether a server uses the same name for different transports or not is up to the operator.

...and CoAP-over-GATT (and slipmux?) will follow.²

²No development is known to be going on with the other transports.
Can’t just rely on literals!
How do I know what to do with coap://c.example.com?

Naming systems provide metadata.

$ dig c.example.com

c.example.com. 32000 IN AAAA 2001:db8::42

but

$ dig BLE c.example.com

c.example.com. 32000 IN BLE\(^2\) 0123456789ab

Not much more, but has own discovery

\(^1\) The literal is OK on its own, but insufficient when combined with just a port.
\(^2\) With no desire to do this here or precisely that way, but it would suffice.
Other lookup systems can provide similar metadata

Extrapolating from draft core-resource-directory-extensions for forward proxy setup

GET coap://thedirectory.net/rd-lookup/
   ?anchor=coap://00publickey00.onion-ish.arpa

2.05 Content
Payload:
<coap+tcp://[2001:db8::5]/>;rel=has-proxy;
   anchor="coap://00publickey00.onion-ish.arpa"
Alternative history
If we had RFC 9460 SVCB back when RFC 8323 was done

$ dig SVCB _coap.c.example.com
c.example.com. 32000 IN SVCB 1 . transport="tcp"
c.example.com. 32000 IN SVCB 2 . transport="udp" port=61616
c.example.com. 32000 IN SVCB 3 . transport="udp"

Adopt for future IP based transports; solves no problems for us any more unless anyone wants to deprecate +tcp and +ws.

---

3 CoAP over TCP was approved 2017-12-18, first draft schwartz-httpbis-dns-alt-svc was published 2018-01-16

Christian Amsüss
Outcome and outlook of the Friday T2TRG meeting
IETF118 Prague, CoRE, 2023-11-09
Going forward

- Gather any objections here.
- Update GATT and transport-interfaces drafts to not do coap+x unless criterion is met.