DNS Service Binding Records with CoAP

draft-ietf-core-dns-over-coap
draft-lenders-core-dnr
draft-lenders-core-coap-dtls-svcb
draft-ietf-core-transport-indication

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IETF 120, CoRE WG Session, 2024-07-24
What happened so far?

**Original idea:** Discovery of DoC resolvers via DNS, DHCP(v6), and RAs
\[\Rightarrow\] Service Binding (SVCB) records (RFCs 9460–9462) + their SvcParams field (RFC 9463)
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⇒ Service Binding (SVCB) records (RFCs 9460–9462) +
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**Problem:**

- De-facto only discovery for CoAP over TLS (via ALPN ID in RFC 8323) specified

- CoAP over DTLS needs own ALPN ID
  ⇒ "co" ID allocated, experts asked for draft

- Missing: Different CoAP transport protocols, OSCORE/EDHOC, path for DoC

**May Interim:**

- Create a minimum DoC SvcParam Bundle
  ⇒ Path for DoC specified as `docpath` key in draft-ietf-core-dns-over-coap-07
  - value as CBOR sequence of text strings, text representation in CBOR-diag

- `draft-lenders-core-coap-dtls-svcb-00`: ALPN ID for CoAP over DTLS

- `draft-lenders-core-dnr-03`: Problem Statement SvcParams for OSCORE

- `draft-ietf-core-transport-indication-06`: Transports beyond TLS/DTLS
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The Minimum DoC SvcParam Bundle

**draft-ietf-core-dns-over-coap-07**
- DoC functionality
- SvcParamKey for DoC
- Server path: docpath
- Example algorithm: SvcParams \(\leftrightarrow\) CoAP request

**draft-lenders-core-coap-dtls-svcb-00**
- alpn SvcParamValue for CoAP over TLS/DTLS

**draft-lenders-core-dnr-03**
- Problem Statement: SvcParams for OSCORE/EDHOC

**draft-ietf-core-transport-indication-06**
- coaptransport to identify CoAP transport protocols beyond secure ones
- Full construction algorithm: SvcParams \(\leftrightarrow\) CoAP request

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**RFC 9460**
- SVCB RR

**RFC 9461**
- dohpath etc.

**RFC 9462**
- DDR via SVCB

**RFC 9463**
- DNR via RA/DHCP

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Format:
- normative
- informative
The Minimum DoC SvcParam Bundle

- **RFC 9460**: SVCB RR
- **RFC 9461**: SvcParamKey for DoC server path: `docpath`
- **RFC 9462**: DDR via SVCB
- **RFC 9463**: DNR via RA/DHCP
- **draft-ietf-core-dns-over-coap-07**: Example algorithm: `SvcParams ↔ CoAP request`
- **draft-lenders-core-coap-dtls-svcb-00**: `alpn` SvcParamValue for CoAP over TLS/DTLS
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- **normative**
- **informative**
The Minimum DoC SvcParam Bundle

- RFC 9460: SVCB RR
- RFC 9461: dohpath etc.
- RFC 9462: DDR via SVCB
- RFC 9463: DNR via RA/DHCP

**Minimal DoC SvcParam Bundle**

- **draft-ietf-core-dns-over-coap-07**: DoC functionality
- **SvcParamKey** for DoC server path: `docpath`
- Example algorithm: `SvcParams ↔ CoAP request`

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- **draft-ietf-core-transport-indication-06**: `coaptransport` to identify CoAP transport protocols beyond secure ones
- Full construction algorithm: `SvcParams ↔ CoAP request`
Conclusion

- Batteries for DoC are now included: DDR/DNR possible for TLS/DTLS
- Everything beyond: Ongoing work for the rest of the year

⇒ DoC (+ DTLS ALPN ID) ready for working group last call?