

# Parameterized Nameserver Delegation with NS2 and NS2T

[draft-tapril-ns2-00](#)

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# Overview

- 2 new RRtypes. NS2 and NS2T to allow connection parameters to be encoded in the nameserver lookup
- Can co-exist with existing NS records and support a phased transition/rollout
- Uses the [DNS SVCB](#) format record encoding and formatting

# NS2 RRType

- Exists at zone cuts, indicative of a delegation.
- May be present in the child or parent. (If in parent, suggested in child)
- Uses both forms of the DNS SVCB record, Service Form and Alias Form
  - Service form: Standard delegation, includes parameters about delegation
  - Alias Form: Points to another set of NS2/NS2T records which can identify the authoritative nameservers or alias further

# NS2 Example - Service Form

Zone: .COM

```
example.com. 86400 IN NS2      2 ns2.example.com. ( transports=dot,
dnsTlsFingerprints=["MIIS987SSLKJ...123===",
"MIIS3SODKSLKJ...456==="] )
example.com. 86400 IN NS2      3 ns1.example.com. ( transports=dot,
dnsTlsFingerprints=["MIIS987SSLKJ...145===",
"MIIS3SODKSLKJ...890==="] )
example.com. 86400 IN NS2      3 ns3.example.com. ( transports=doh,
dnsDohURITemplate="https://ns.example.net/q/{?dns}" )
example.com. 86400 IN NS      ns1.example.com.
ns1.example.com. 86400 IN NS 192.0.2.1
ns2.example.com. 86400 IN NS 192.0.2.2
ns3.example.com. 86400 IN NS 192.0.2.3
```

# NS2 Example - Alias Form

Zone: .COM

example.com.	86400	IN	NS2	0	customer1.example.net.
example.com.	86400	IN	NS2	0	customer1.example.org.

## Use Case

- Easier zone management at the registry for users of third party DNS providers

# NS2T RRType

- Not found at a zone cut
- Referred to by either a NS2 or NS2T record
- Uses both forms of the DNS SVCB record, Service Form and Alias Form
  - Service form: Used when directing resolution to a set of nameservers
  - Alias Form: Points to another set of NS2/NS2T records which can identify the authoritative nameservers or alias further

# NS2T Example

Zone: EXAMPLE.NET

```
ns2.example.net 3600      IN NS2T 1  ns1.example.org. (
    transports=dot,
    dnsTlsFingerprints=["MIIS987SSLKJ...123==="] )
ns2.example.net 3600      IN NS2T 2  ns2.example.org. (
    transports=doh,
    ddnsDohURITemplate="https://ns.example.net/q/{?dns}")
```

# NS2 / NS2T SvcParamKeys

- ipv4hint, ipv6hint: Equivalent to glue records
- transports: The dns protocol to use for this record (eg: do53, dot, doh, doq)
- dnsDotEarlyData: Should DoT allow TLS early data, for example [rfc8446#section-4.2.10](#)
- dnsDohURITemplate: The DOH URI template
- esniconfig: Encrypted servername indication for TLS 1.3
- dnsTlsFingerprints: Contains the same information as a TLSA record
- ds, dnskey: Encoding the DS and/or DNSKEY information for the specific server indicated in the NS2/NS2T record



# Future Work

- Re-align with the current DNS SVCB records
- Expand placeholder sections
- Incorporate feedback (some is already in from early reviewers)

# Questions / Comments / Corrections

Willing to review?

Any work group interest?