Telephone Related Queries (TeRQ)

draft-peterson-terq-00

The Changing Focus of ENUM

- RFC2916 (2000), most recently RFC6116 (2011)
- The original vision: user-driven, public records
  - Now: carrier-driven, records often contain internal network data
- Change in applicability places different requirements on ENUM
  - Authentication/authorization of query sources
  - Resolution of compound queries
    - Not just the domain name, but relational elements
  - Returning data that isn't really a resource indicator
    - e.g., CNAM – storing the resource itself in a NAPTR record

- We saw these requirements in the E2MD proposals a few years ago
  - SPEERMINT/DRINKS have looked at this from the provisioning side

Time to Reconsider?

- The standard DNS protocols don't do those things well today
  - In deployments, non-standard solutions are prevalent
  - Path to getting those solutions standardized is not clear
    - Not here to rehash E2MD arguments
- Requirements in the field aren't going away, though
  - Need a way to ask rich questions about telephone routing and get rich answers
- The question: would it help to approach these problems without factoring in the constraints of any underlying protocol? Without:
  - A legacy public "golden root" anchor
  - Semantics of DNS queries (exact match on label)
  - Exclusive focus on TN
  - Requirement to return a URI (limiting syntactically)

The TeRQ Strawman

- Proposal: Establish a data model first, then worry about underlying transports and encoding
- Query Elements:
  - Source (Query Source, Query Intermediary, Route Source)
  - Subject (Telephone Number, SPID, etc.)
  - Attributes (constrains query: e.g., "voip" if only looking for VoIP)
- Response Elements:
  - Response Code
  - Subject (Optional)
  - Records
    - Authority (Source of the data)
    - Attributes (Name/Value pairs)
    - Priority
    - Expiration

The TeRQ Architecture
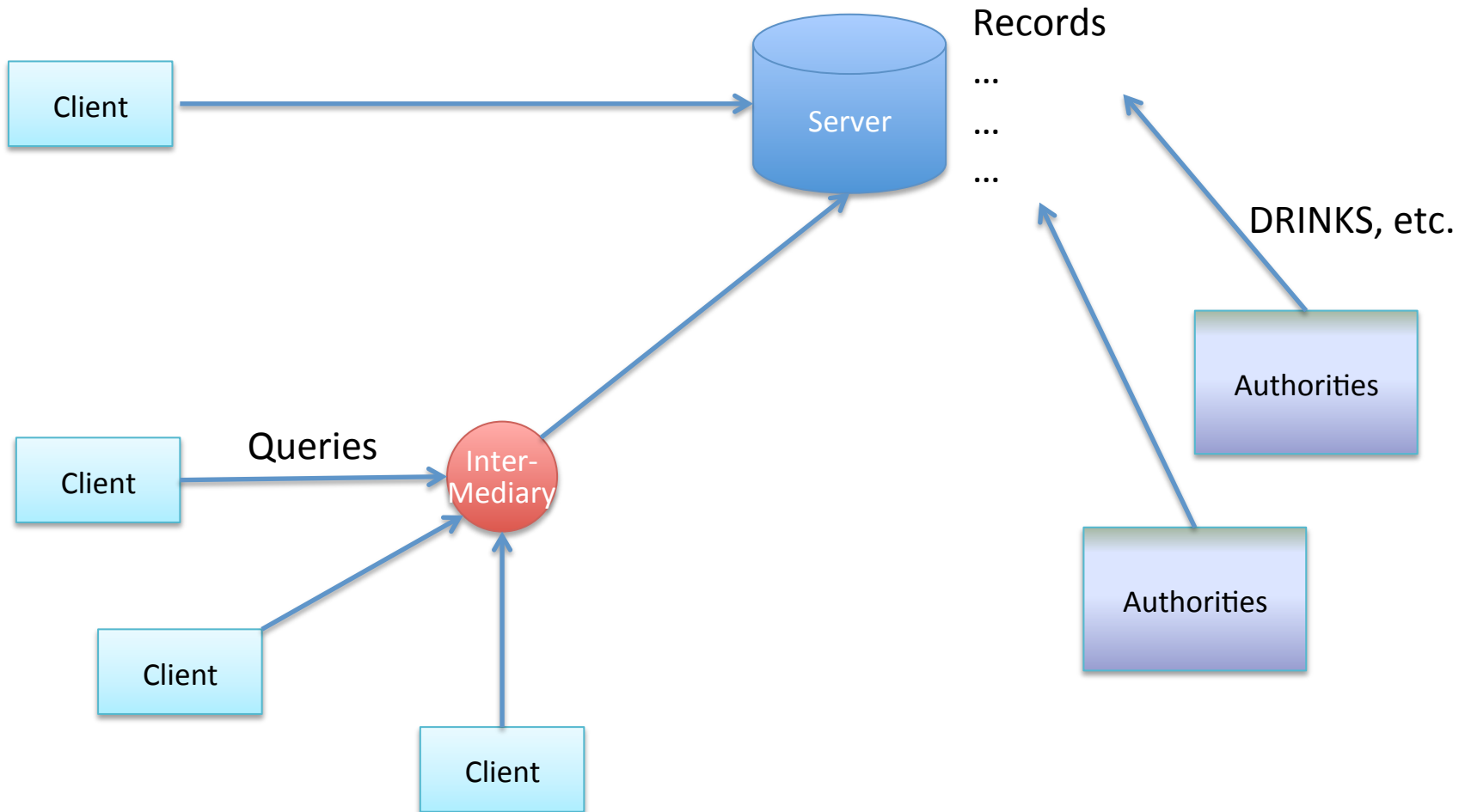
Transporting TeRQ

- Once we agree on semantics, work on bindings
  - A binding is defined as an encoding and a transport
  - Could build on JSON/HTTP, could build on ASN.1/UDP
    - DNS? Never say never…
  - Bindings need to detail how the elements of the data model are mapped to the encoding
    - Other low-level details like chunking, representation of cryptographic security, etc.
  - Also must be possible to transcode between bindings without losing data (at an Intermediary)
- Aim for maximum applicability
  - Not just a telco protocol, a web protocol
  - Something to work for Verizon and Google

Thoughts?

- Today, just floating the idea
  - There's a -00 to read
- If people think this has potential, could come back with a charter in Vancouver
- Some good list discussions already
- Welcome any further feedback here