

Proposal for New Performance Tool

Tool requirements

High level

- Support multiple protocols **by design** including session based protocols. (Initial wish list is UDP, TCP, TLS, HTTPS and QUIC)
- Support emulating ~30,000 clients on a single server/VM
- Support configuration to describe client populations e.g.
 - 10% of clients send at maximum rate the connection can sustain
 - 50% send at X qps and use 2s idle timeout
 - 40% send at Y qps use 10s idle timeout
- Read query names from a file or autogenerate them based on a simple algorithm
- Detailed statistics on throughput, latency and handshake overhead.
- Robust recovery from TCP/TLS connection failures or packet loss.

More detailed

- General configuration will included (with sensible defaults were applicable)
 - server address
 - server port
 - local address to send from
 - local port to send from
 - Query file OR query name generation algorithm
 - Timeout for query completion
 - Num of time to run through query file OR duration of test run
 - Maximum outstanding queries
 - Limit queries per second sent
 - Num of clients to emulate
 - Socket send/receive buffer size
 - Use EDNS(0)?
 - Set the DO bit?
 - TSIG key to use
 - Transport selection
- TCP/TLS configuration (for each client population)
 - Override on queries per second sent, query timeout, max outstanding queries, buffer size.
 - Number of queries sent per connection OR connection duration
 - Client 'idle' timeout - how long the client leaves the connection open before re-cycling
 - Delay between subsequent connections
 - EDNS(0) padding
- TLS configuration (for each client population)
 - TLS version/cipher suites
 - Handshake attributes (TFO, Session resumption, etc.)