DOTS Protocol

draft-teague-dots-protocol-02

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Evolving draft focus

• Effort to consolidate protocol drafts begun in Seoul
• Some obvious overlap in proposed solutions
• Work with other solutions draft authors to converge
• Emphasize mode of signaling
Data channel consolidation

• RESTful semantics common in all data channel proposals
• Remove data channel from draft-teague-dots-protocol
• Merge efforts with draft-reddy-dots-data-channel
Signal channel tenets

- Minimal — “Help, it hurts here” + basic feedback
- Transport agnostic — Implement over UDP, CoAP, QUIC, etc.
- Efficient — Compact wire format, reduce RTT
- Extensible, backwardly compatible
- Let REST be REST — Reliable messaging goes over data channel
draft-teague-dots-protocol mode of signaling

• Soft state refresh
• Heartbeat as signal
• Each agent sends heartbeat with current status
• Example: Mitigation request (Figure 3)
  • Client includes mitigation request with scope in heartbeat
  • Server receives mitigation request and starts mitigation
  • Server includes mitigation status in heartbeat
  • Client discerns mitigation started via server heartbeat
  • Client maintains mitigation request in heartbeat
// Active signaling session

//-- Signal Channel Active --> // with 15s heartbeat interval

//-- Heartbeat --//-- // Client heartbeat

<-- Heartbeat --//-- // Server heartbeat

\ // 15 seconds elapse
/

//-- Heartbeat --//-- // Client heartbeat now has
\ + MitigationRequest // mitigation request params.
/

<-- Heartbeat --//-- // Server heartbeat now has
\ + MitigationPending // pending mit. request status
/

\ // 15s elapse, +/- jitter.
/

//-- Heartbeat --//-- // Client heartbeat maintains
\ + MitigationRequest // request as it waits for
// mitigation to begin.
/

X-- Heartbeat --//-- // Mitigation enabled, but
\ + MitigationRunning // server heartbeat is dropped
/

\ // 15s elapse, +/- jitter.
/

//-- Heartbeat --//-- // Client heartbeat maintains
\ + MitigationRequest // request as it waits for
// mitigation to begin.
/

<-- Heartbeat --//-- // Server heartbeat, status of
\ + MitigationRunning // running mit. sent to client
Signal channel status

• Unconverged but moving toward convergence
• Recent changes to draft-reddy-dots-signal-channel increase similarity
• Next: replace protobufs with CBOR to increase overlap further
Next steps

• Define what is mandatory vs optional
• Continue towards consolidating signal efforts