

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

Client	Server
	// 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