

Options to Transport CLUE Messages

draft-wenger-clue- transport-01

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Constraints

- SIP to be used as base protocol for call setup
 - Charter, backward compatibility
- “Framework” draft requires (for valid reasons) handshake different from what is commonly used in SIP
 - (offer/answer (OA) vs. three-trip handshake)
- Unclear whether there is conceptual difference between “initial” CLUE information, and CLUE information exchanged during the lifetime of a session. Suspicion: no significant difference

Conclusion #1

- Need two stage “negotiation”: first SIP, then CLUE
 - Can probably overlap at least partially

Options for transporting CLUE exchange

- **Piggy-backing on SIP (SIP-INFO, SIP-UPDATE, RE-INVITE)**
 - Preference for SIP-INFO over other SIP methods expressed on mailing list
 - Package needed
- **CLUE stream as a SIP-negotiated “media” stream**
 - Message Session Relay Protocol (MSRP, RFC 4975)
 - CLUE-specific framing over some transport
 - Other
- Content indirection, multi-MIME body, allows non-SDP
 - FTP and config files (as TeleSuite did)
 - Dismissed as impractical

Conclusion #2

- Two options:
 - **CLUE stream as a SIP-negotiated “media” stream**
 - **CLUE messages piggy-backed on SIP using SIP-INFO**

CLUE negotiation over SIP-established “media” stream

- Setup “CLUE” media stream through SIP w/ OA
- Assumed OA result: “CLUE” session goes through
- CLUE handshake over CLUE “media” stream
- Based on results of CLUE handshake, setup of full audiovisual functionality by SIP-UPDATE or SIP-REINVITE
 - To re-use existing functionality in codec boxes
 - CLUE as a bolt-on

Options for CLUE “media” stream

- **UDP recommended** because of NATs, firewalls.
- Problem: UDP is unreliable
 - Packet size under MTU: no issue, redundant sending, but unlikely given complexity of CLUE
 - That’s assuming XML-ish representation. Perhaps can use compression, binary model, ...?
 - Devise our own BFCP-like handshake using UDP-based transport.
- TCP mentioned again as an option (K. Drage, 11/2)
 - Can we come to a conclusion that, for our industry, TCP is NOT an option (even with ICE TCP) ?

Conclusion #3

- CLUE WG to devise our own BFCP-like handshake to make CLUE media stream sufficiently reliable

CLUE message Content Representation

- As suggested, we are NOT constrained to use SDP; modern, flexible formats are OK
- XML natural candidate
- Is CLUE presentation in XML exceeding UDP MTU? Probably yes, especially for multipoint
 - This is independent from the transport over “SIP” or over “SIP–negotiated UDP channel”
 - Issue of fragmentation will arise for any format, especially if 1000’s of endpoints can participate in a session.
- Issue of congestion control
 - Telepresence is supposed high bandwidth media, signaling is drop in a bucket
 - Need to support dozens/hundreds of clients, some of which may be behind slow link.
 - Conclusion: YES, we need congestion control

Conclusion #4

- Use XML for CLUE message content representation

Conclusions Summary

1. Need two stage “negotiation”: first SIP, then CLUE
 - Can probably overlap at least partially
2. Two options for transport:
 - **CLUE stream as a SIP-negotiated “media” stream**
 - **CLUE messages piggy-backed on SIP using SIP-INFO**
3. CLUE WG to devise our own BFCP-like handshake to make CLUE media stream sufficiently reliable
 - Certainly for **media stream** option, but also for **SIP-INFO** option?
4. Use XML for CLUE message content representation