Analysis of Middlebox Interactions for Signaling Protocol Communication along the Media Path

draft-sipping-stucker-media-path-middleboxes-00

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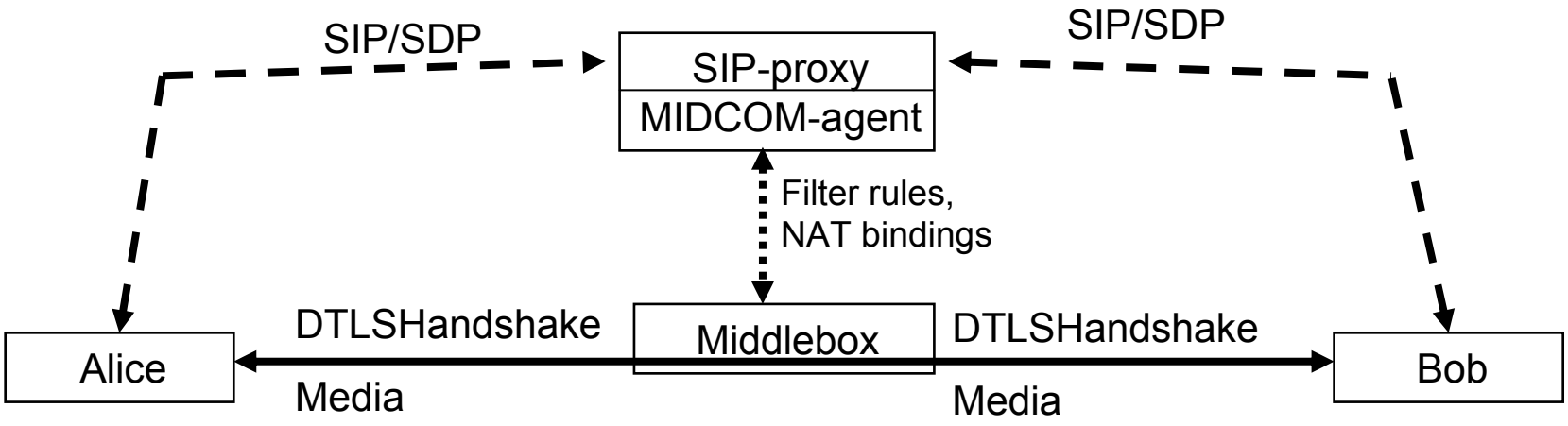
References

- [Framework]
  Framework for Establishing an SRTP Security Context using DTLS (draft-ietf-sip-dtls-srtp-framework-00)

- [Middleboxes]
  Analysis of Middlebox Interactions for Signaling Protocol Communication along the Media Path (draft-sipping-stucker-media-path-middleboxes-00)

- [DTLS-SRTP-Prot]
  Datagram Transport Layer Security (DTLS) Extension to Establish Keys for Secure Real-time Transport Protocol (SRTP) (draft-ietf-avt-dtls-srtp-01)

Middleboxes in the Media Path



- Functions of the middleboxes (cf. [Middleboxes]):
  - gating/pinholing: block all flows that are not allocated by the MIDCOM-agent
  - NAT/media relay: For a bidirectional flow A←→B, allocate a pair of transport addresses, one representing B towards A, one representing A towards B, and relay traffic accordingly
- Focus of the presentation is on firewalling.

Example Message Flow from [Framework]



INVITE (offer)

INVITE(offer)

DTLS – Hello

DTLS – Hello

DTLS – Finished

Media

DTLS – Finished

200 OK

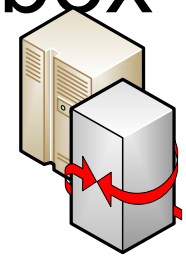
200 OK

Media

ACK

ACK

Middlebox Impact


INVITE (offer)

INVITE(offer)

X DTLS - Hello

200 OK

200 OK

ACK

ACK

DTLS – Hello

DTLS – Hello

DTLS – Finished

Media

DTLS – Finished

Media

Recommendations

- [Middleboxes] goes beyond a problem description.
- It aims to make recommendations (to trigger discussions)
  - Details need to be investigated
  - Other solution approaches also possible

REC #1

- Ensure that a mechanism exists that causes both endpoints to send at least one packet in the forward direction as part of, or prior to, the handshake process.

REC #2

- Allow a nominal amount of traffic to be exchanged between endpoints to enable completion of media path signaling prior to the session being established.

REC #3

- The failure to complete signaling on the media path should not automatically cause the session establishment to fail unless explicitly specified by one or more endpoints.

Next Steps

- Waiting for feedback from the group on how we should proceed