STUN Handling in B2BUAs
(draft-ram-straw-b2bua-stun)

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Agenda

- Problem Statement
- Overview
- ICE Termination with B2BUAs
- ICE Passthrough with B2BUAs
- Next Steps

Problem Statement

- This draft describes the behavior B2BUA should follow for STUN packets received as part of ICE processing

Overview

- Endpoints likely to use ICE for:
  - NAT, Firewall traversal
  - Address Selection (when it has multiple addresses, dual-stack, etc.)
  - Verify media path exists prior to connecting the call (avoids ghost rings, etc.)
- B2BUAs acting on media path likely to receive STUN packets as part of ICE processing.
  - RFC 5245 does not clearly describe the behavior B2BUAs should follow

Overview (cont'd..)

- B2BUAs acting on media plane can be classified as (per RFC 7092):
  - Media relay [only modifies transport (e.g. UDP/IP) header]
  - Media-aware relay [inspects and/or modifies RTP/RTCP headers]
  - Media termination [e.g. Transcoder]
- B2BUAs MUST support ICE or at a minimum support ICE LITE functionality.
- B2BUAs MUST use the mechanism described in Section 5.1.2 of [RFC5764] to demultiplex STUN packets that arrive on RTP/RTCP port.

Overview (cont'd..)

- B2BUAs can handle STUN messages received as part of ICE processing in two ways:
  - **ICE termination** – B2BUAs can always terminate ICE on each leg and thus have two ICE contexts. Reason for termination may be due to the need for B2BUA to be in the media path (e.g. Transcoding, address hiding, interworking etc.)
  - **ICE pass-through** – In case a B2BUA does not have a need to be in media path, it can passthrough STUN messages received as part of ICE.

ICE Termination with B2BUAs

- B2BUAs (both full and ICE lite) terminating ICE must do the following:
  - The B2BUA MUST NOT propagate the candidate list received in the incoming SDP to the outbound SDP. Should re-write the c/m-lines and advertise its candidate list.
  - The B2BUA MUST generate a new username, password values for ice- ufrag and ice-pwd attributes when it sends out the SDP and MUST NOT propagate the ufrag, password values it received from either endpoints
  - B2BUA terminates the ICE messages on each leg and does not propagate them.

ICE Pass-through with B2BUAs

- B2BUAs (both full and ICE lite) that wishes to pass-through ICE does the following:
  - When a B2BUA receives an incoming SDP with ICE semantics it copies the received candidate list, adds its own candidate list in the outgoing SDP. The B2BUA also copies the ufrag/password values it received in the incoming SDP to the outgoing SDP and then sends it out.
  - **The B2BUAs candidates will have lower-priority than the candidates provided by the endpoint; this way endpoint and remote peer candidate pairs are tested first before trying candidate pairs with B2BUA candidates**.
  - The B2BUA may optionally change m/c lines in the incoming SDP to its own IP add/port before forwarding.

ICE Pass-through with B2BUAs (cont'd)

- After offer/answer is complete, the endpoints will have both the B2BUA's and remote peer candidates. It will then use ICE procedures described in [RFC5245] to nominate a candidate pair for sending and receiving media streams.
- **With this approach the B2BUA will be in media path only if the ICE checks between all the candidate pairs formed from the both the endpoints fails.**

Next Steps

- Additional reviews needed
- Adoption as WG item