Limitations of Session Announcement Protocol (SAP)

draft-asaeda-mboned-sap-limitation-00

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Goals

• discuss SAPv2 current uses
• clarify SAPv2 limitations

• inherits some text/ideas from
  – draft-ietf-mboned-session-announcement-req
  – draft-ietf-fecframe-config-signaling-04

• this I-D does not specify any fix
**Use_1**: a component of a session discovery mechanism

- *historical use*
  - announce all multicast IP sessions (e.g. described with SDP) to all prospective users
    - users then choose to join sessions of interest
  - based on:
    - periodical broadcast of all entries
    - soft-state model
      - an entry not refreshed eventually disappears
Use_2: a component of a config. information transport mechanism

• **different** assumptions
  – limited number of multicast sessions (e.g., only 1) that the receivers already joined
    • receivers obtained the content description through another mechanism and decided to join
  – receivers need to collect additional information pertaining to the flows carried in the session(s)
    • no in-band mechanism defined to that purpose

• SAP is a convenient solution:
  – simple, scalable (no per-receiver state), on-the-shelf
Use_2 example: FFCI (FEC Framework Config. Information)


- FFCI transport to multiple receivers

FFCI describes these relationships...

E.g. SDP over SAP

One or multiple transport connections (e.g. mcast groups/UDP)

Source flow_1

Repair flow_1

Repair flow_2

Repair flow_3

Receiver_1

Receiver_2

Receiver_3
SAP limitations: **announcement interval vs. latency**

- **use_1:**
  - the flooding approach causes either major overheads or large latency
  - specifies an algorithm and a minimum 200s period

- **use_2:**
  - the 200s period is totally inappropriate given the small number of configuration entries. Small values preferred
  - even if interval is adjusted, there is no way to communicate interval to receiver (no header field)
  - only solution is to include interval into payload but the solution becomes content dependent!
SAP limitations: scope management

• ttl scoping has limits
  – hard to control
  – sender needs topology awareness

• administrative scoping improves things, however
  – hard to make complex scoping areas
  – in IPv4 SSM address range is not compatible with administrative scoping (can be solved though)
SAP limitations: **ASM dependency**

- any SAP instance may send announcements to the same SAP multicast group
  - incompatible with SSM
SAP limitations: lack of sender and receiver control

• sender control:
  – impossible to only allow approved senders to send announcements
  – impossible to make non-approved senders stop sending announcements

• receiver control:
  – a flooding approach makes it hard to prevent receivers within scope to receive/process announcements
  – encryption adds complexity…
Next steps

• WG item document?