Report on Interim RSVP Working Group Meeting

San Jose, CA

November 10, 1995

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An interim WG meeting was held on Nov. 10, 1995, hosted by Cisco Systems in San Jose, CA.

o 21 participants

o Minutes were published

o Transmitted on MBONE

The following slides summarize the results and open issues from that meeting.

Interim Meeting: Changes Accepted

- No Filter_Spec for WF style reservation

  WF means "all senders", no partial wildcards

- Dropped StyleID from STYLE object

  (Redundant with attribute vector.)

- Simplified SE style: only one flowspec

  WF: Q
  FF: (Q1,F1), (Q2,F2), ...
  SE: Q,(F1,F2, ...)

Interim Meeting: Changes Accepted

- TIME_VALUES object required

  Recommend useful value.: 30 secs.

  Configurable per interface.

- Policing defined at split points

- Specify 2 sec defer time for local repair

  Configurable per interface

  Router Alert Draft -> Prop Std with RSVP

Interim Meeting: Agreements Reached

- *PathErr* msgs sent hop-by-hop
  (since INTEGRITY is hop-by-hop)
- Require Tspecs in *Path* messages
- No merging of SE with WF reservations
  (else violate *least-astonishment* principle)
- Merging SE with SE: as in document

  $SE(Q_1, F_{11}, F_{12}, ...)$ & $SE(Q_2, F_{21}, F_{22}, ...)$ =>

  $SE(Max(Q_1, Q_2), F_{11}, F_{12}, ... F_{21}, F_{22}, ...)$

Interim Meeting: Agreements Reached

- Remove Rmax (E-to-E bound on refresh rate R)

  -- Open: definition of max allowable refresh rate.

  -- Open: adaptive calculation of K.

- Unknown CType in object of known class: always an error (for objects that are not opaque to RSVP)

  -- Error msg includes (class, CType): allows an end system to fall back to a known CType when it can.

Interim Meeting: Extended Discussions

- UDP Encapsulation
- Role of Protocol Id and Zero Ports
- Soft ACKs
- Error Handling
- Tunnels
- IP6 flow ids and encryption

UDP Encapsulation

- UDP Encapsulation: Can't avoid it

  -- Requirement: support hosts without raw sockets.

  -- Use 224.0.0.X well-known addr for multicast dest

  =>

  (a) First-hop router is RSVP-capable, or

  (b) Configure hosts with addr(first RSVP-capable hop)

  -- Must configure hosts with addr(first RSVP-hop) for unicast dest.

Role of Protocol Id and Zero Ports

Agreed:

- Protocol Id is in SESSION specification and is required.

  SESSION(D, Pid, dstPort)

- Generally, zero port field in SESSION, FILTER_SPEC, or SENDER_TEMPLATE means that protocol has no ports.

  (Not a "wildcard")

- dstPort, srcPort always mean UDP-like ports.

Role of Pid and Zero Ports

- Any value may be specified for Pid
- End node enforces rules:

  o If Pid = 6 or 17 =>
  dstPort must be non-zero.

  o If Pid known to have UDP-like ports =>
  dstPort must be non-zero

  o If Pid known to NOT have UDP-like ports =>
  dstPort and srcPort must be zero

"Soft" ACKs

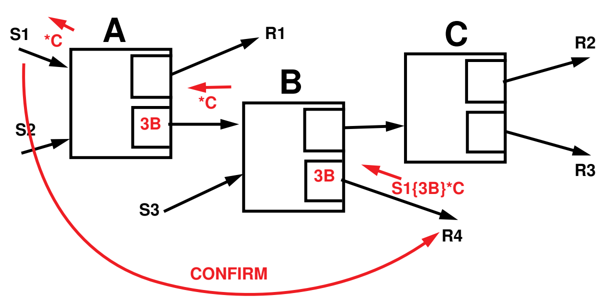
-- Some vendors strongly urged branch-point soft ACKs

-- ID08 includes CONFIRM object and message

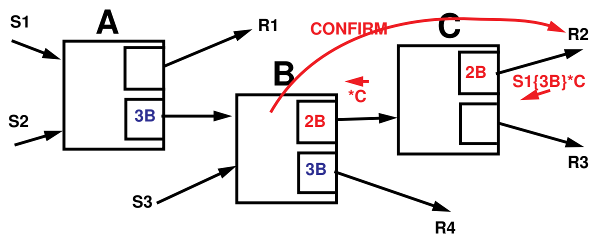
-- Needs more discussion.

-- Another view: Need session-layer protocol

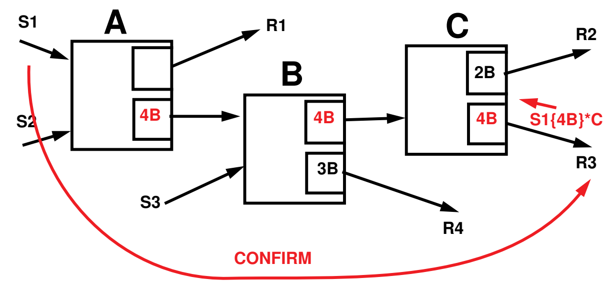
CONFIRM Object



CONFIRM Object



CONFIRM Object



Error Handling

- **Confusing discussion...**

  Proposed but not accepted requirements:

  -- Do not allow periodic error messages

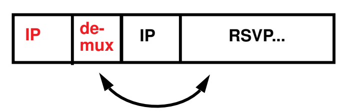
  -- Do not generate multiple error messages

Tunnels

- **Tunnels**

  -- Many tunnel encapsulations already exist

  -- RSVP wants flow demux info on the 'outside'



-- Reservations for individual flows in tunnel
=> *recursive'* use of RSVP

-- Action: Wroclawski, Zhang, Krawczyk

IP6 Encryption and Flow Id

Issue: Encrypted IP6 => dstPort hidden, so can't define session in usual way.

FlowIds can be used, but then cannot use WF style.

Resv must explicitly list FlowId for each sender
=> SE, not WF.

Soft ACKs

Soft ACK types:

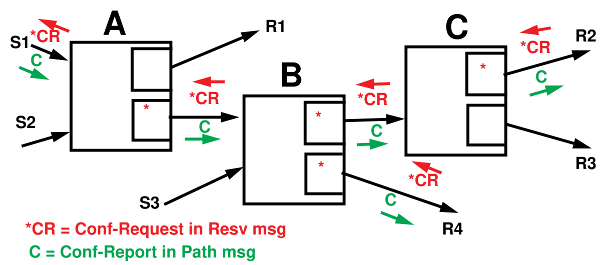
-- Branch-point vs. End-to-End

-- Using CONFIRM messages vs. Path messages

-- One-off vs. Stateful

Soft ACK Proposal

End-to-End, stateful, using Path messages.



Error Handling

ISSUES:

1. Should *ResvErr* be delivered to all downstream receivers, or only those that 'caused' the error?

- o ResvErr as failure indication vs. as adaptive trigger
- o Spec currently says: only ones who caused error.
- o If send to all, applications can tell whether they 'caused' error.

2. Should an application get *any* ResvErr message?

3. Should application get *multiple* ResvErr messages?

4. Should *Resv* that failed A/C be forwarded anyway?