

BYE Reconsideration



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Problem



- Just as many users can simultaneously join a session, they can simultaneously leave
- Based on current algorithm, result is a flood of BYE packets
- Forward Reconsideration was used as a fix for join problem.
- Leave problem is different:
 - Applications usually terminate after user's leave a session
 - BYE packets are important in small to medium sized conferences

Solution



■ BYE Reconsideration

■ Operation

- Some user decides to leave session at time t_l .
- If group size at this time is below some threshold (50?), send the BYE and leave the session
- If group size is more than the threshold, initialize counter n_l to 1. Set a timer to expire at time t :

$$t = t_l + R\left(\frac{1}{2}\right)\max(T_{\min}, Cn_l)$$

■ As BYE messages from users in the group are received, increment n_l .

■ When the timer expires, recompute t (including the random factor). If the new value is more than the old, set the timer to expire at the new time. Otherwise, send a BYE packet.

■ If the application wishes to terminate before a BYE is sent, it may do so silently without sending the BYE.

Performance



- 10,005 users join a session at $t=0$
- 10,000 users leave session at $t=10,000$
- $C=711\text{ms}$
- Graph shows cumulative packets sent

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Conclusion



- Algorithm properties
 - Simple
 - Allows for rapid transmission of BYE's when groups are small
 - Controls BYE floods very effectively