

Experimental Determination of a Lower Bound for Ta

IETF 92

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B.1. Pacing of STUN Transactions

Sending of these STUN requests will often have the effect of creating bindings on NAT devices between the client and the STUN servers. Experience has shown that many NAT devices have upper limits on the rate at which they will create new bindings. Experiments have shown that once every 20 ms is well supported, but not much lower than that. **This is why Ta has a lower bound of 20 ms.**

Bandwidth Considerations

- ICE check (16 char ufrag) = 156 bytes
- At $T_a = 20$ ms (50 pps), this is ~ 64 kbps
 - Not counting STUN responses
- Chrome uses 50 ms interval $\rightarrow 24$ kbps

Experiment Methodology

1. For N in [5, 10, 15, 20, 25, 30, 35, 40, 45, 50]
2. Create a socket
3. Send a check to single STUN server every N ms
4. Create new socket
5. Send a check to one of M STUN servers every N ms
6. Create M new sockets
7. Send a check from each socket to one of M STUN servers every N ms
8. Record N, loss rate, and RTT for each

Prediction

- For single socket/server, should be little correlation between N and loss
 - likely small correlation between N and RTT
- For single socket/multi server, should have slight inverse correlation between N and loss
 - Due to binding creation on symmetric NAT
- For multi socket/multi server, should have clear inverse correlation between N and loss
 - Each check is always new binding