

TCP Candidates with Interactive Connectivity Establishment (ICE)

draft-ietf-mmusic-ice-tcp
(and draft-lowekamp-mmusic-ice-tcp-framework)

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Background

- UDP-based NAT traversal standardization work (STUN/TURN/ICE) done
- Many applications use TCP instead → need for TCP NAT traversal
- TCP NAT traversal more complicated
 - TCP candidates left out from the original ICE spec
 - ICE TCP: draft-ietf-mmusic-ice-tcp

ICE TCP

- ICE TCP proposes 3 new TCP candidate types: active, passive, and Simultaneous-Open (SO)
 - Send checks from active to passive, and SO to SO
- Low success ratio for direct connectivity
 - Active/passive candidates commonly fail with hosts behind different NATs
 - Simultaneous-Open: ~40% success ratio, not supported on some operating systems
 - Must use relaying (TURN) often → inefficient

ICE TCP Framework

- draft-lowekamp-mmusic-ice-tcp-framework
- Use various protocols for NAT traversal
 - UPnP IGD, NAT-PMP, Teredo, SOCKS, etc.
 - Open-ended framework
- Good chances for improving the success ratio of direct connections
- More methods for relaying

Current Status

- ICE TCP drafts have expired
- (Used to) have fairly high demand for this
 - RELOAD
 - Binary Floor Control Protocol (BFCP)
 - TCP media with RTSP
 - Various other documents referring to ICE TCP
- Consensus on merging the two drafts
 - WG meeting at the 73rd IETF (November 2008)

Next Steps

- Feedback/comments
- New, merged version of the drafts
 - Need review(er)s
- Fix what is fixable but trying to keep it simple
- Document limitations
- WGLC

Open Issues

- Which methods as must-implement?
 - Proposal: act/pass and SO as a must, recommend TURN, informational description of the other proposals and recommend supporting them
- Experimental data would be nice
 - Meaningful prioritization recommendations
 - How well SO works today?
 - How well different middlebox communication methods are supported?