From STATIC to DYNAMIC Network Paths
Network Options
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- ECN : Good for TCP. Fairness problems in UDP.
  Lack of OS support.
- DSCP: Different meaning in different networks.
  Might get retagged on the way.
Client Options
Client Options

Rate Adapt: Getting so good that it discovers network problems before end-users notice.
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Rate Adapt: Getting so good that discovers network problems before end users notice.

ICE: Checks connectivity on all available paths Physical, and various ports and protocols.
End Goal

Find all possible combination of physical, IP (IPv4/IPv6), transport(UDP/TCP/TLS) and ports that have connectivity.

Get network and client feedback and choose the best suitable network path. If condition change, be able to dynamically switch between paths/protocols.
Building Blocks

Multipath RTP
Building Blocks

Multipath RTP

Enables multiple network paths to be used for media
Building Blocks

ICE

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Checks for connectivity across IP, protocol and port
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Checks for connectivity across IP, protocol and port
Builds valid list
Building Blocks

ICE

Checks for connectivity across IP, protocol and port
Builds valid list
Chooses _one_ candidate pair for communication
Building Time

mRTP

mRTP
Building Time
Building Time

Creates nice transitions
No need to switch media addresses
if ICE detects a better path
Avoid what?

TCP traffic
Avoid what?

TCP traffic

UDP Rate limit threshold
Avoid what?

TCP traffic

UDP Rate limit threshold

UDP traffic

DDOS Attack
Avoid what?

TCP traffic

DDOS Attack

Annoying disruptions

UDP Rate limit threshold

UDP + QUIC

UDP traffic
Why

• Combining influence and avoidance
• Getting harder and harder to influence due to privacy and security.
• Internet is dynamic, deal with it.
• Dangerous with static assumptions, UDP is best for media etc.
Are We Ready?

- Something we should do?
- QUIC vs mRTP?
- Ready to write drafts? code?