Multipath QUIC Interop

draft-ietf-quic-multipath

Interop testing of Multipath QUIC

Draft: draft-ietf-quic-multipath-05

Five Implementations: QUICHE, XCODE, PICOQUIC, RASK, Ericsson-AIOQUIC

Testing:

- Connection establishment and negotiation of support
- Validating establishment of multiple paths
- Sending data over different paths
- Acknowledgement of data over the different paths
- Abandoning paths
- Path Status message

Result: A number of issues have been found and interoperability has been improved among the participants

Interop Result

server → / client ↓	Ericsson-aioquic	xquic	picoquic	Rask	quiche
Ericsson-aioquic	HVDA		HVDA	HVDA	HVDA
xquic	HVDA	HDVACS	HVDA	H	HVDA
picoquic					
Rask	HVDA		HVDA	HVDA	HVDA
quiche	HVDAC		HVDAC		HVDACS

Feature	code	details
Handshake	H	The handshake completes with successful negotiation of enable_multipath transport parameter (both ends indicate 0x01)
Path Validation	V	Client sends PATH_CHALLENGE frame to open a new path and server replies with PATH_RESPONSE
Send data	D	Stream data (of one of more streams) is send on all paths; ACK_MP frames are sent and processed
Path Close	C	Client closes a path with PATH_ABANDON frame
Path status	S	Client sends PATH_STATUS frame
Multipath ACK	A	One endpoint sends data and the other endpoints sends ACK (randomly) on all path independent of where data is received