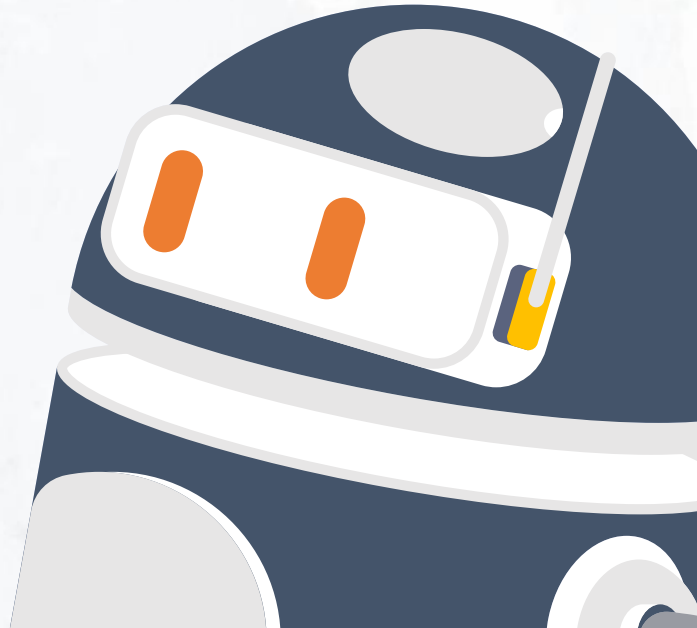
HTTP OVER UDP/QUIC



Mega Putri Rahmawati Darta (3122640038)
Akhmad Mufti Ali Wafa (3122640048)

What is QUIC ??

- QUIC is Google’s new multiplexing protocol.
- This is run on UDP.
- QUIC succeed to SPDY’s features

Features of QUIC

- Stream multiplexing over the same UDP Connections.
- UDP resilience to loss (QUIC divorced HOL blocking !!)
- FEC resilience to loss QUIC sends XORsum of the packets.
- TLS-like security
- Low cost, 0-RTT start instead of TCP handshake
- Pluggable congestion control TCP-CUBIC and Pacing-based

Multiplexing Protocols

- HTTP/1.1
- SPDY
- QUIC

HTTP/1.1

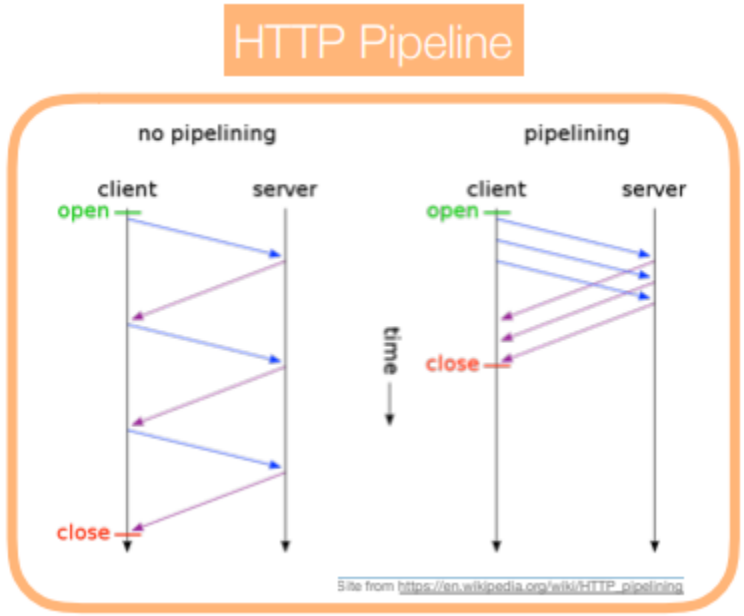
HTTP/1.1 doesn’t have multiplexing.

However, some techniques can use.

- HTTP Pipeline

Which enables to send multiple request without waiting ACK packets.

-Use Multiple TCP Connection



HTTP/1.1 doesn’t have multiplexing.

So uses multiple TCP connection.

This connection is limited up to 6

SPDY

SPDY is proposed by Google. Which is succeed to HTTP/2.

-Multiple HTTP request on one TCP socket

Which enables to avoid handshakes and slow start

SPDY makes multiple streams,

this reduces waiting time for download.

-Compress HTTP headers

This reduces size of the packet.

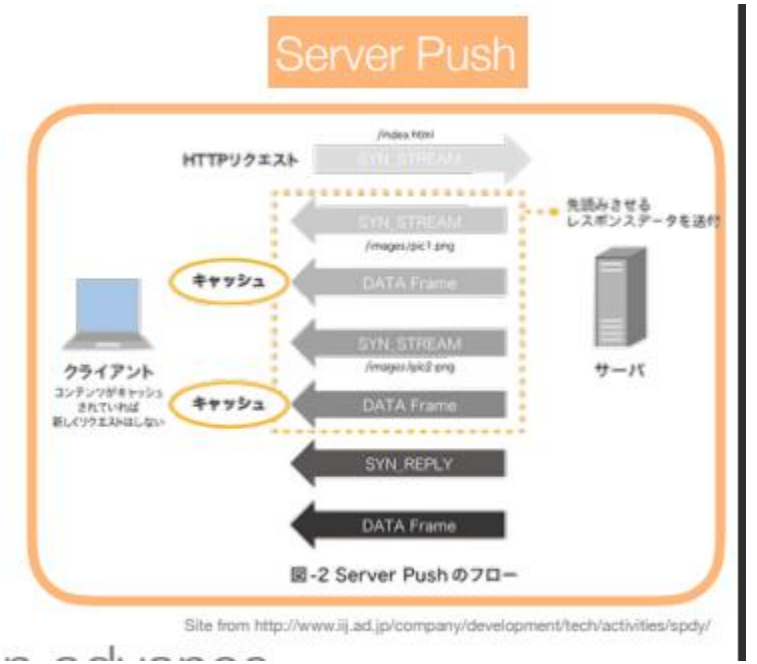
-Server Push

Server forecasts next request.And sends packet in advance.

-Prioritization among parallel request

Server assigns priority to packet 0 to 7.

Which optimizes data processing for client.



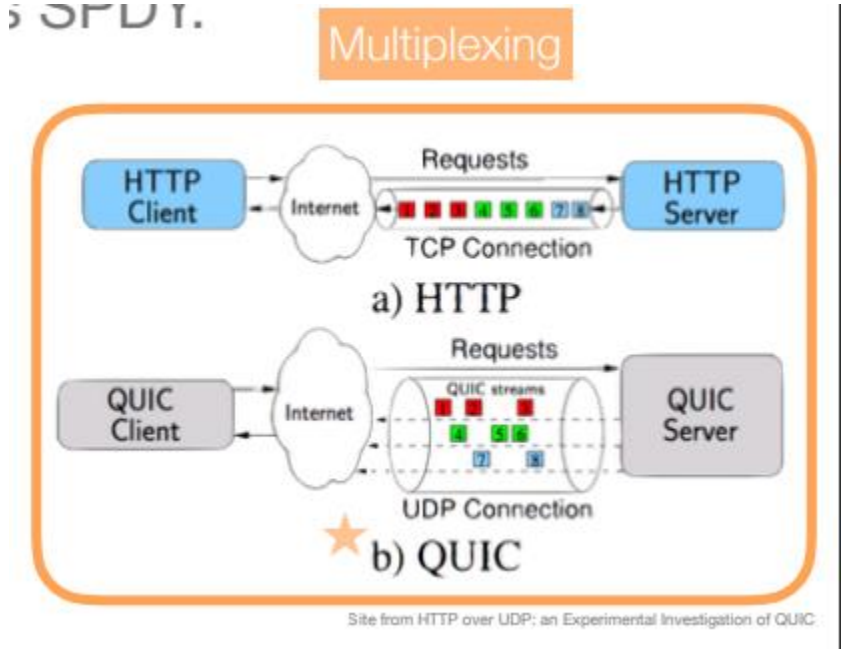
QUIC

QUIC is proposed by Google. Which inherits SPDY.

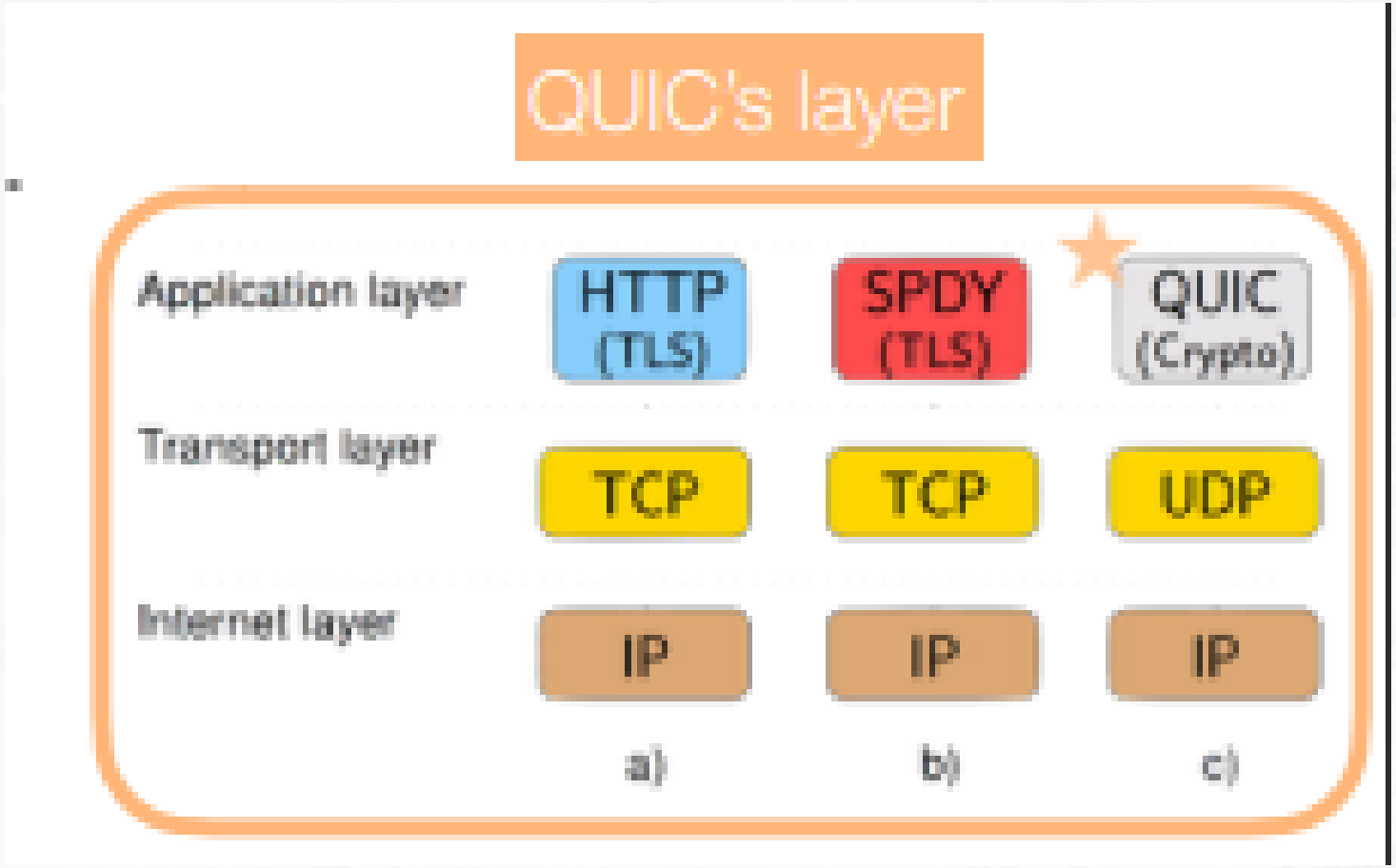
- QUIC runs over UDP

QUIC runs over UDP, NOT TCP.

This means eliminate HOL blocking.



QUIC LAYER


QUIC's layer
Application layer
HTTP (TLS)
SPDY (TLS)
QUIC (Crypto)
Transport layer
TCP
TCP
UDP
Internet layer
IP
IP
IP
a)
b)
c)

THANKS YOU