

MASQUE & HTTP

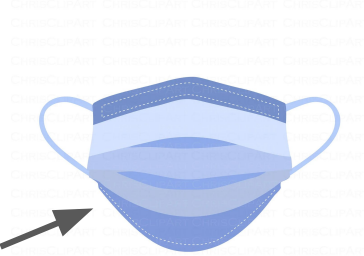
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What is MASQUE?

Multiplexed Application Substrate over QUIC Encryption

"MASQUE" name created in 2018 – no relation to life saving devices



A masque allows hiding your identity



Wait, is this related to HTTP?



What is MASQUE?

A way to proxy any Internet traffic over HTTP



A Brief Trip Down Memory Lane

HTTP was initially unencrypted

Bandwidth was expensive → Caching

→ ~~Proxies~~ Intermediaries came into existence

Clients started intentionally using intermediaries

Eventually SSL happened, HTTP now needed to proxy something non-HTTP

→ CONNECT method for TCP

20 years later: HTTP/3 uses QUIC. Oh right, UDP!



What is MASQUE?

A way to proxy any Internet traffic over HTTP

→ First: Proxying UDP in HTTP ([RFC 9298](#))

In order to be efficient, can leverage QUIC DATAGRAM frame ([RFC 9221](#))

Toss in a layer of abstraction for good measure: HTTP Datagrams ([RFC 9297](#))

9297 also defines the Capsule Protocol for end-to-end control messages

→ Next: Proxying IP in HTTP ([draft-ietf-masque-connect-ip](#))



What is it good for?

HTTP is a great choice for a proxying protocol

- Well-maintained protocol and implementation

- Allows reusing existing infrastructure, security posture, load balancers

- Future-proof and extensible

MASQUE is well suited for existing and future deployments

- Corporate VPN

- Intra-cloud inter-VM communication



What next? (1/2)

Extensions to CONNECT-UDP

"Listener" sockets – enables WebRTC – [draft-schinazi-connect-udp-listen](#)

QUIC-aware extension – [draft-pauly-masque-quic-proxy](#)

Extensions to HTTP Datagrams

Sequence numbers – [draft-ihlar-masque-datagram-numbers](#)

PMTUD – [draft-schwartz-masque-h3-datagram-ping](#)

Priorities – [draft-pardue-masque-dgram-priority](#)

What next? (2/2)

Generic HTTP extensions that mainly benefit MASQUE scenarios (venue TBD)

DNS Proxy Status – [draft-pauly-masque-dns-proxy-status](#)

Access Descriptors – [draft-schwartz-masque-access-descriptions](#)

Modern HTTP Proxies – [draft-schwartz-modern-http-proxies](#)

Get involved!

Meeting this week on Wednesday Session I – "Morning"

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github.com/ietf-wg-masque

