IP Geolocation & HTTP

draft-pauly-httpbis-geoip-hint-01

HTTPBIS - IETF 121 – Dublin – 2024-11

Tommy Pauly, David Schinazi, Ciara McMullin, Dustin Mitchell

What's the problem?

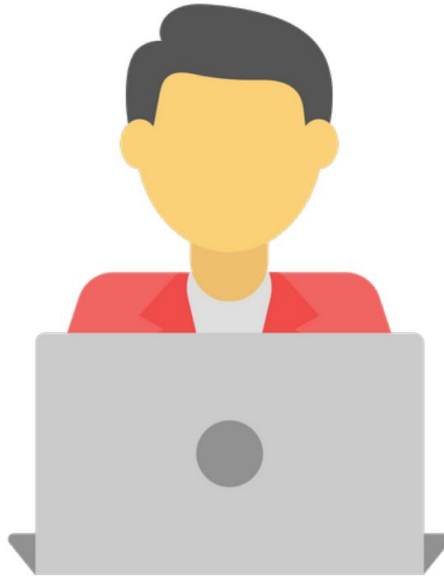IP-hiding technologies are great for improving user privacy!

But masking IP addresses comes with some challenges ☹️

(1) Egress IPs mapping to inaccurate location data frustrates users and leads them to disable privacy features

(2) Implementing privacy solutions is costly and complex, as it requires extensive IP address pools and depends on geofeed adoption
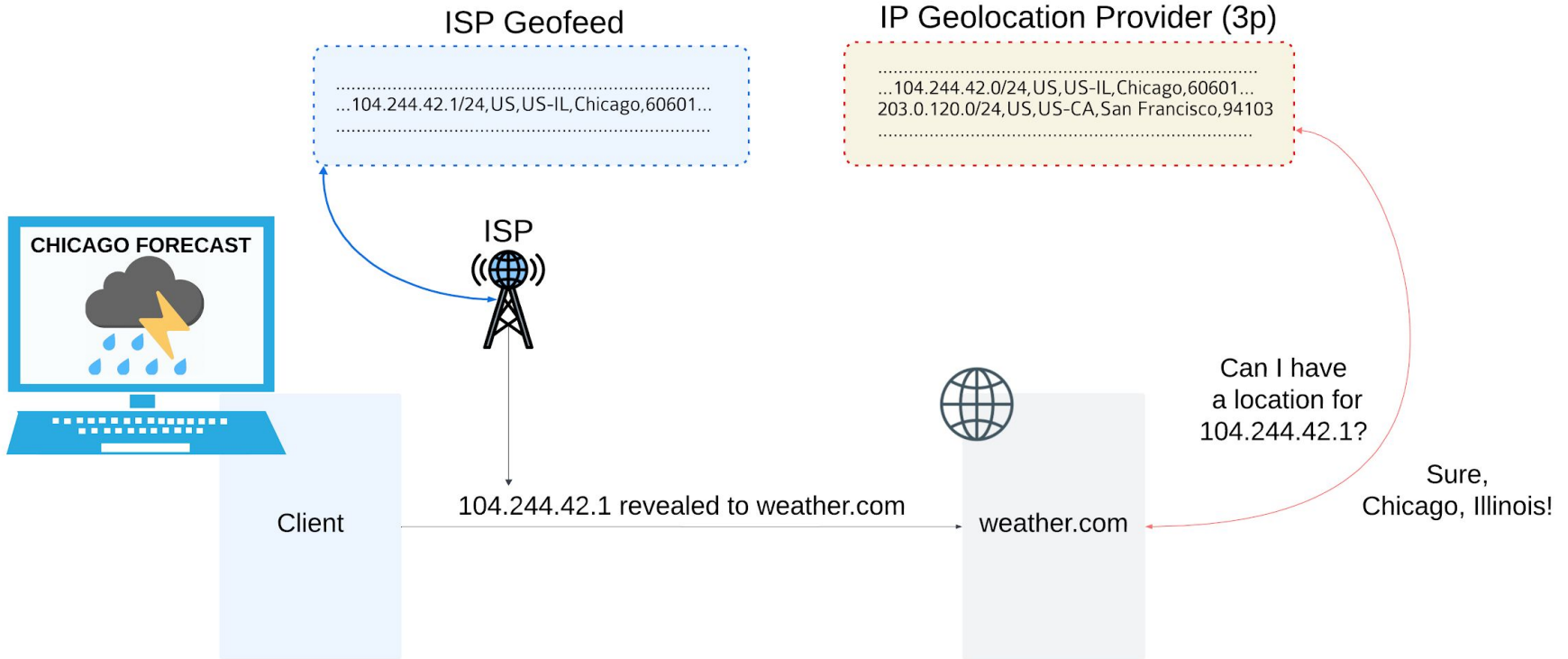
What's the goal?

Improve user privacy while maintaining the relevancy of user-intended location

What's the weather today?

No IP-hiding technologies

ISP Geofeed

....
...104.244.42.1/24,US,US-IL,Chicago,60601...
....

IP Geolocation Provider (3p)

....
...104.244.42.0/24,US,US-IL,Chicago,60601...
203.0.120.0/24,US,US-CA,San Francisco,94103
....

CHICAGO FORECAST

ISP

Client

104.244.42.1 revealed to weather.com

weather.com

Can I have
a location for
104.244.42.1?

Sure,
Chicago, Illinois!

With a Proxy or VPN

ISP Geofeed
...104.244.42.1/24,US,US-IL,Chicago,60601...

IP Geolocation Provider (3p)
...104.244.42.0/24,US,US-IL,Chicago,60601...
203.0.120.0/24,US,US-CA,San Francisco,94103

SAN FRANCISCO FORECAST

ISP

Client

104.244.42.1

Proxy (s) / VPN / IP Masking Technology

203.0.120.27

weather.com

Can I have a location for 203.0.120.27?

Sure, San Francisco, California!

Proxy Geofeed
...203.0.120.0/24,US,US-IL,Chicago,60601...

6

But I'm not in San Francisco

Let's turn this off I need to know the weather near me

ISP Geofeed

...104.244.42.1/24,US,US-IL,Chicago,60601...

ISP

IP Geolocation Provider (3p)

...104.244.42.0/24,US,US-IL,Chicago,60601...
203.0.120.0/24,US,US-CA,San Francisco,94103

CHICAGO FORECAST

104.244.42.1 revealed to weather.com

Can I have a location for 104.244.42.1?

Sure, Chicago, Illinois!

Client

Proxy (s) / VPN / IP Masking Technology

weather.com
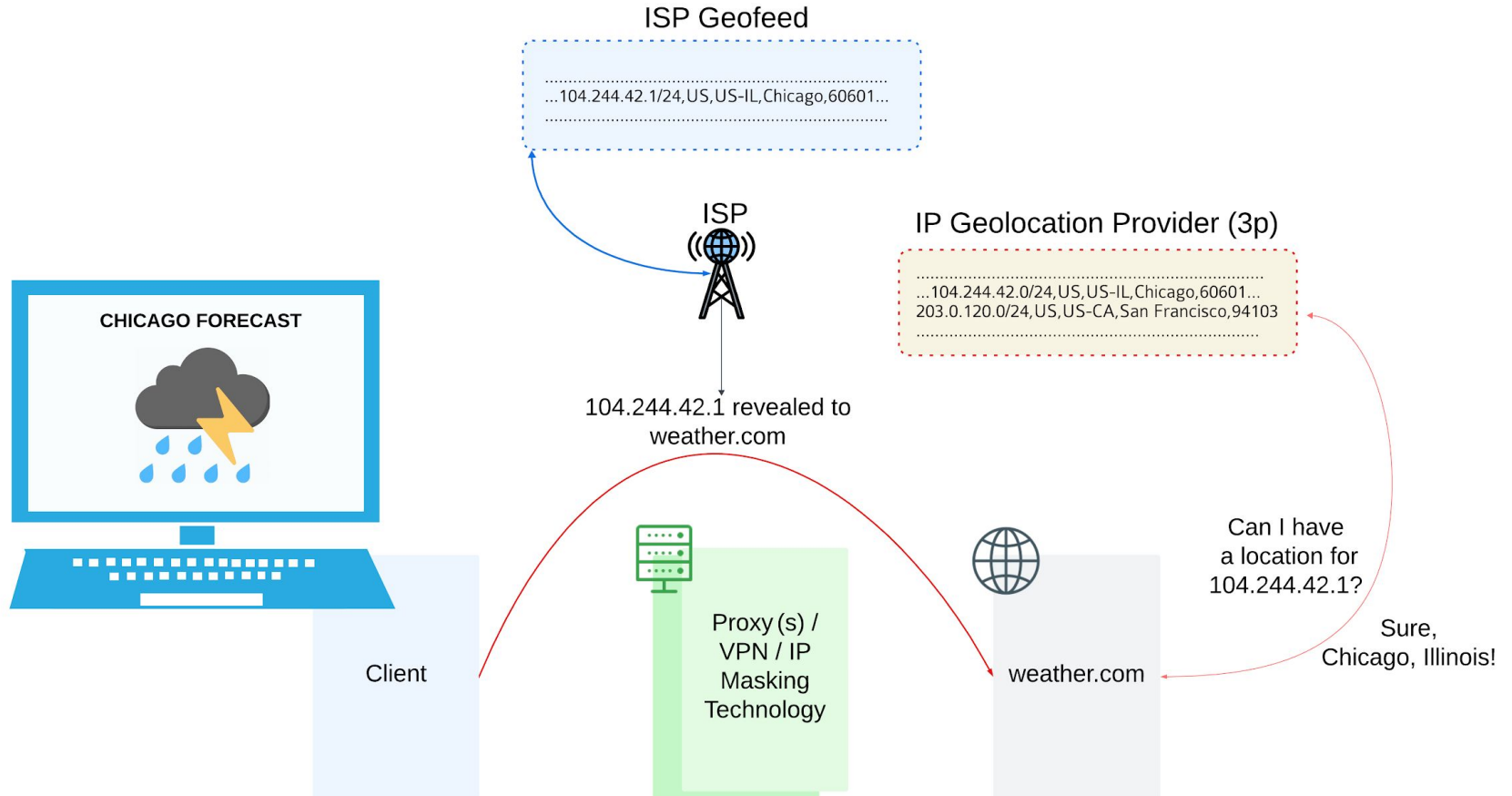
But now my IP address is exposed

Can we get IP privacy <u>and</u> relevant location?

ISP Geofeed

...104.244.42.1/24,US,US-IL,Chicago,60601...

IP Geolocation Provider (3p)

...104.244.42.0/24,US,US-IL,Chicago,60601...
203.0.120.0/24,US,US-CA,San Francisco,94103

CHICAGO FORECAST

ISP

Can I have a location for 203.0.120.27?

Client

104.244.42.1

Proxy (s) / VPN / IP Masking Technology

203.0.120.27

weather.com

Sure, San Francisco, California!

Proxy Geofeed

...203.0.120.0/24,US,US-IL,Chicago,60601...

CHICAGO!
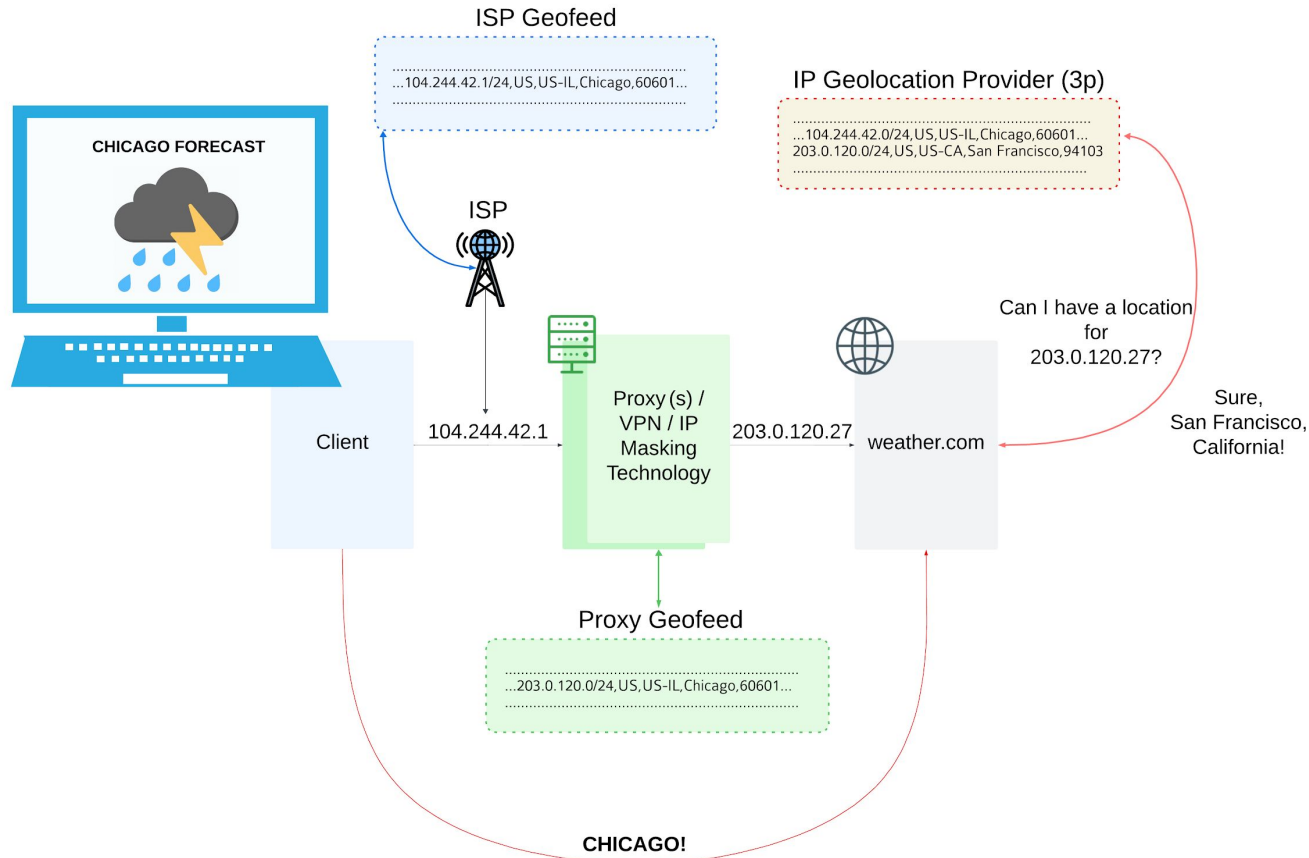
draft-pauly-httpbis-geoip-hint-01

Discusses an HTTP Client Hint that would let the client actively send their network geolocation

```
Sec-CH-IP-Geo = "SG,SG-01,Singapore"
```

Geolocation is sourced from a trusted cooperating server that looks up the IP address in a geo-IP database

Cooperating server should ensure that location is based on the client's IP address and not on any more specific sources like GPS or other detailed location data

Luckily I checked the weather today

IP Geo - HTTPBIS - IETF 121

IP Geolocation & HTTP

draft-pauly-httpbis-geoip-hint-01

HTTPBIS - IETF 121 – Dublin – 2024-11

Tommy Pauly, David Schinazi, Ciara McMullin, Dustin Mitchell