

# High-quality IP Geofeeds using AI Coding Assistants and MCP

Sid Mathur - IP data aggregation specialist @ Fastah Inc.

# Oops!



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## Netflix thinks I'm in a different country

If TV shows and movies aren't available in your language, or if you're missing titles that other people in your area can see, Netflix may think you are in a different country than where you are currently located. If you use a VPN or proxy, try turning it off.

**NOTE:** If you signed up for Netflix in a European Union (EU) member country and are watching in a different EU member country, learn more about [using Netflix outside of your home](#).

If you still have trouble, follow these steps:

- ▶ Check if a VPN is turned on
- ▶ Reset your network settings
- ▶ Contact your ISP

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Was this article helpful? Yes No

### Before you contact your ISP

Your ISP will need some information about your network when you contact them:

1. Using a computer or mobile device on the same network as the device with the issue, open a web browser.
2. Go to [fast.com](http://fast.com). Netflix will start a connection test.
3. When the test stops, click **Show more info**.
4. Next to **Client**, note the country, and your IP address.

**NOTE:** Your IP address is the group of numbers and/or letters that have a dot (.) or colon (:) in between them.

### When you contact your ISP

1. Tell them about the issue you're having, and the troubleshooting steps you've tried so far.
2. Share the country and IP address you collected earlier, and have them confirm that they match the location and IP address assigned to your home.
  - If the information **does match**, the ISP will need to work with Netflix directly to fix the problem. Ask them to [contact our customer service team](#).
  - If the information **doesn't match**, ask your ISP to confirm your connection uses their DNS server.
    - If it **does** use their DNS server, they'll need to work with Netflix directly to fix the problem. Ask them to [contact our customer service team](#).
    - If it **doesn't** use their DNS server, ask them for help switching to their DNS server, and then restart your Netflix app and try again.

**“Contact your ISP with IP and DNS...”**



**Manage public IP  
Manage IP reputation  
Manage geolocation?**



***Do. Or do not. There is no try.***

# Intro to IP geofeeds

Advertising approximation geolocation using RFC8805 & friends



# The Why of IP geolocation

- Public IPs often need approximate geolocation
  - Which country : banking and financial transaction security
  - Which state : compliance with gambling laws
  - Which city : featured products on a retailer's website
- Consumers don't want to be geo-blocked or mis-served content
  - ISPs and Carriers get complaints from end users
  - “I am being served the wrong weather”
  - “I am not allowed to access my movie subscription”

# The How - RFCs 8805 & 9632

- RFC 8805 : **Authoring** IP geolocation feeds as CSV

*inetnum, US, US-CA, San Francisco*

*inet6sum, US, US-TX,*

*inetnum, GB, GB-ENG, London*

*inet6num, SG, ,*

# The How - RFCs 8805 & 9632

- RFC 9632: **Distributing IP** geolocation feeds
  - How to **publish** the URL to a CSV in RIR records
  - How to cryptographically **attest** a feed (RPKI-assisted)
  - How to enable **discovery** by IP data aggregators

# Best practices

Embracing geolocation for your IP address ranges

# Best practices for Authoring

- **Cadence**
- **Workflow**
- **Geolocation semantics**

# Best practices for Authoring

- Establish a publishing **cadence**
  - Small ISPs – once a month
  - Large ISPs and mobile carriers – once a week
  - Public clouds, large CDNs – once a day

# Best practices for Authoring

- Establish a publishing **workflow**
  - Identify input data source (IPAM, Excel, CSV, Database)
  - Authoring+ Validation of RFC 8805 CSV
  - Publishing on the public HTTPS server
  - Tagging all RIR records (inetnums) with Geofeed URL

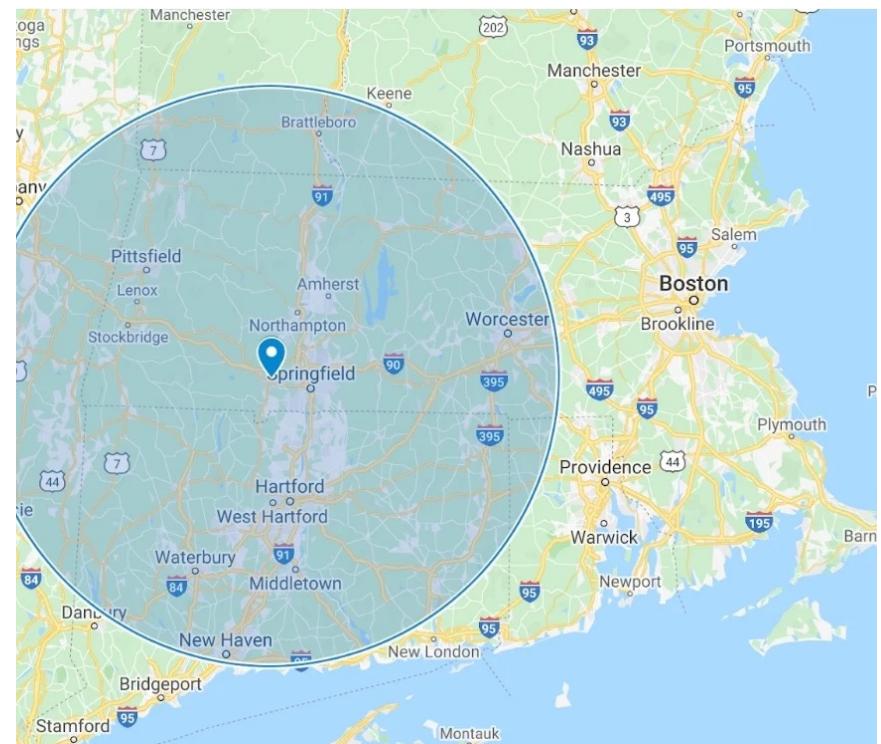
# Best practices for Authoring

- Thinking carefully about **Geolocation semantics**
  - More accuracy isn't always better
  - Invalid place names can invalidate entire *inetnum*
  - Distinguish network elements from consumer IPs

# Best practice – regions over points

- IP geolocation is **statistical and inexact**
- Plan in terms of **geographical regions** and NOT a single point.

153.66.155.0/24,US,US-MA,<no city>  
(anywhere in Massachusetts)



Courtesy: MaxMind Inc. blog

# Best practice – vary accuracy intentionally

- Fixed-internet ISPs – OK to specify cities and towns
  - 153.66.155.0/24,US,US-MA,Worcester
- Mobile Carriers – just use a state
  - 153.66.154.0/24,US,US-MA,
- Satellite ISPs – large state or small country
  - 153.66.153.0/24,US,US-TX
  - 153.66.152.0/24,SG,,
- Public clouds and CDNs – OK to specify cities
  - 153.66.151.0/24,GB,GB-ENG,London

# Best practice – Publish to your RIR!

- **RFC9632** - *Instant and free visibility of geofeed URL*
- **Remarks** section in inetnum -> add “Geofeed <url>”
- **Host with care**
  - Always-valid TLS certs
  - Welcome crawlers & bots
  - Don’t geo block
  - Content-Type = text/csv; charset=utf-8

# Using AI Coding Assistants

Reducing the “heavy lift” with conversational AI tools



# AI - Prompting tips

Simple prompt sequencing for ChatGPT, GitHub Copilot etc.

- Step 1: Make it read RFC8805 (plain text) and “**think deeply**”
- Step 2: Paste an initial CSV file from IPAM data -> ask chat for **syntax**
- Step 3: Fix country (territory) codes
- Step 4: Fix and verify with country + state codes
- Step 5: Add city name where needed
- Step 6: Chat to **audit semantics including geographical accuracy**
- Validating city names for **accurate reverse lookup (requires MCP!)**

# SKILL.md – AI instructions for geofeed authoring & validation

<https://github.com/fastah/ip-geofeed-skills/>

- Self-help, AI “skill” that you can use at home
- Uses VS Code IDE + AI coding assistant
- Click “Download ZIP” and open folder in VS Code

## AI skills for IP Geolocation feeds - authoring, validating, and publication

[Download ZIP](#)

This package has self-help resources from Siddharth "Sid" Mathur's talk at [NANOG 96](#) San Francisco - [High-quality IP Geofeeds using AI Coding Assistants and MCP](#).

AI coding agents should be asked to read IP geolocation feed validation guidance in [SKILL.md](#).

### Pre-requisites

- IDE - [Visual Studio Code](#).
- If using [GitHub Copilot](#), enable the experimental `chat.useAgentSkills` feature, see [Agent Skills help](#). Related [VS Code config file](#).
- If using [Claude](#) - turn on [Skills in Settings -> Capabilities](#). Enterprise users must also enable [Code execution](#) and [file creation](#). Claude Code supports Skills in beta.
- If using [ChatGPT Codex](#), enable [Skills](#) with the `[[skills.config]]` flag.
- Tools on Windows: Use the Microsoft Store for self-updating [VS Code](#), [Python](#), and [PowerShell](#).

### Quick guide

# RFC 8805 IP Geolocation Feed Validation

## Comprehensive Analysis Report

FILE  
geolocation.csv (AS3491  
Network)

REPORT DATE  
January 27, 2026

TOTAL ENTRIES  
1,796 rows

PASS RATE  
94.8% (1,702 valid)

### Summary Statistics

VALID ROWS

**1,702**

ERRORS FOUND

**94**

WARNINGS

**220**

UNIQUE SUBNETS

**1,796**

### RFC 8805 Compliance Status

✓ Compliant Areas

✗ Non-Compliant Areas



OXI  
CLEAN

## Detailed Error Table

ROW	IP PREFIX	COUNTRY	ISSUE TYPE	INVALID VALUE	CORRECTION NEEDED
65	63.216.32.16/28	AU	Placeholder	undefined	Sydney, Melbourne, Brisbane, etc.
67	63.216.32.128/28	HK	Placeholder	undefined	Hong Kong, Victoria, etc.
69	63.216.32.192/27	MX	Placeholder	undefined	Mexico City, Guadalajara, etc.
917	63.222.114.198/31	US	Airport Code	LA	Los Angeles
140	63.220.194.226/31	HK	Placeholder	Please select	Hong Kong, Victoria, etc.
... 89 more error entries in detailed report ...					

See `geolocation_validation_report.txt` for complete row-by-row listing

## Data Quality Warnings (220 Total)

These are not errors per RFC 8805, but represent opportunities for data quality improvement:

- **City casing inconsistency:** Mixed-case city names detected (e.g., "HongKong" vs "Hong Kong")
- **Missing region codes:** 1,796 entries lack ISO 3166-2 region codes (recommended for precision)
- **Single-host subnets:** Multiple /32 and /128 entries could potentially be aggregated

## Recommendations

# MCP servers

Unlocking “specific knowledge” for your AI coding agents

# Model Context Protocol = USB-C port

- MCP server – extension mechanism for “specific information”
  - The “USB-C port for AI”
  - Supported by Claude, ChatGPT, Copilot, and pretty much ALL AI
  - Now part of the Linux Foundation
- Useful MCP capabilities for IP geolocation feeds
  - Reverse search for city name, state, country to lat/long (map location)
    - Mapbox MCP
    - Google Maps MCP
  - Publishing/hosting the CSV – authenticating to GitHub and deploying
    - See <https://github.com/github/github-mcp-server>

# Thank you

Sid Mathur

[sid@getfastah.com](mailto:sid@getfastah.com), 617-500-7576

Fastah Inc. - an IP geolocation data company

