

Around the World with NTS

deployment and usage

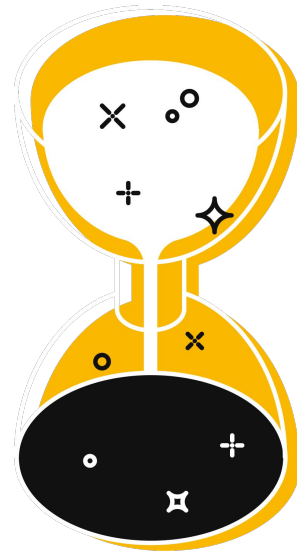
Christer Weinigel, Netnod

Intro

- Christer Weinigel, work for Netnod in Sweden
 - Time & Frequency group
- Netnod, NTP since 1997
 - NTP has been around since the 1980-ies
 - Fairly long in the tooth
 - Authentication used shared secret, does not scale
- I have been working on NTS, RFC 8915
 - NTP with scalable security
 - Solves shared secret distribution
 - Stateless server

NTS details

- RFC 8915
- Simplified explanation of NTS
 - Manages shared secrets for authenticated NTP
 - No state on the server
 - Scales to an unlimited number of clients



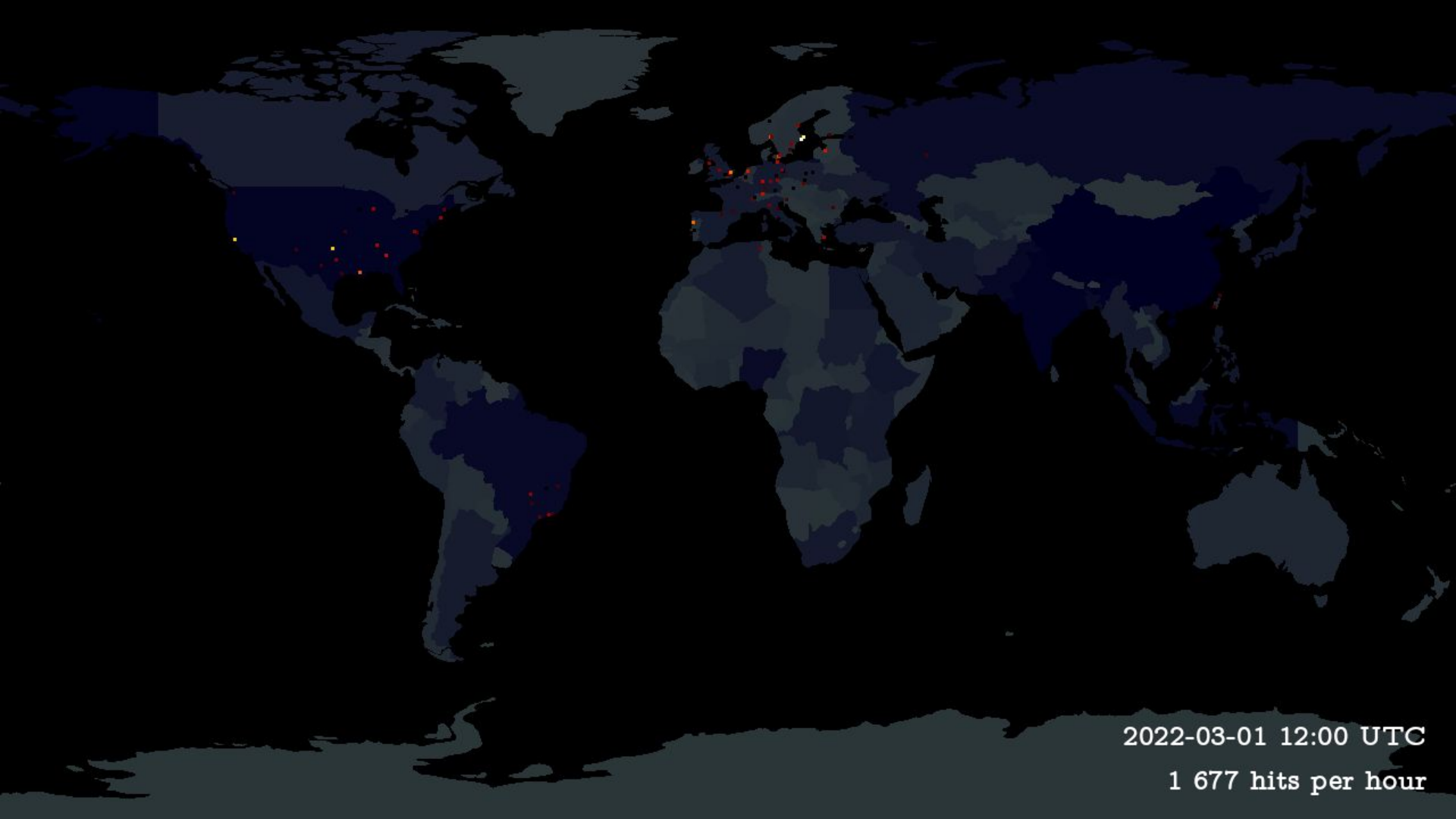
A world map heatmap showing traffic distribution for Netnod NTS-KE. The map uses a color scale from dark blue (low traffic) to red (high traffic). High traffic is concentrated in North America, Europe, and parts of Asia. The title 'Netnod NTS-KE' is centered over the map.

Netnod NTS-KE

Christer Weinigel, Netnod AB
Heatmap produced with Datashader
Geo-IP provided by DB-IP (CC BY 4.0)

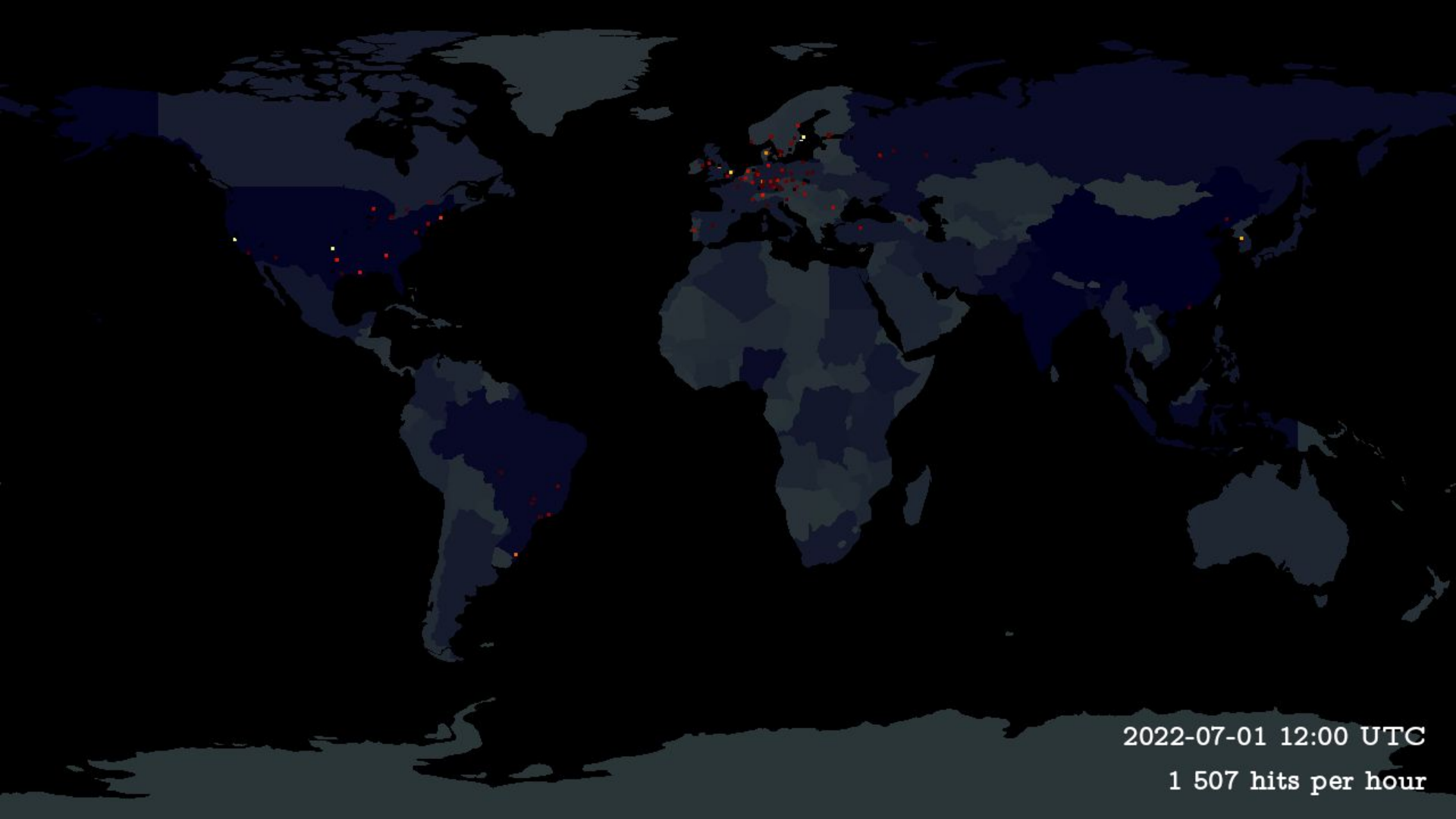
2022-02-23 18:00 UTC

838 hits per hour



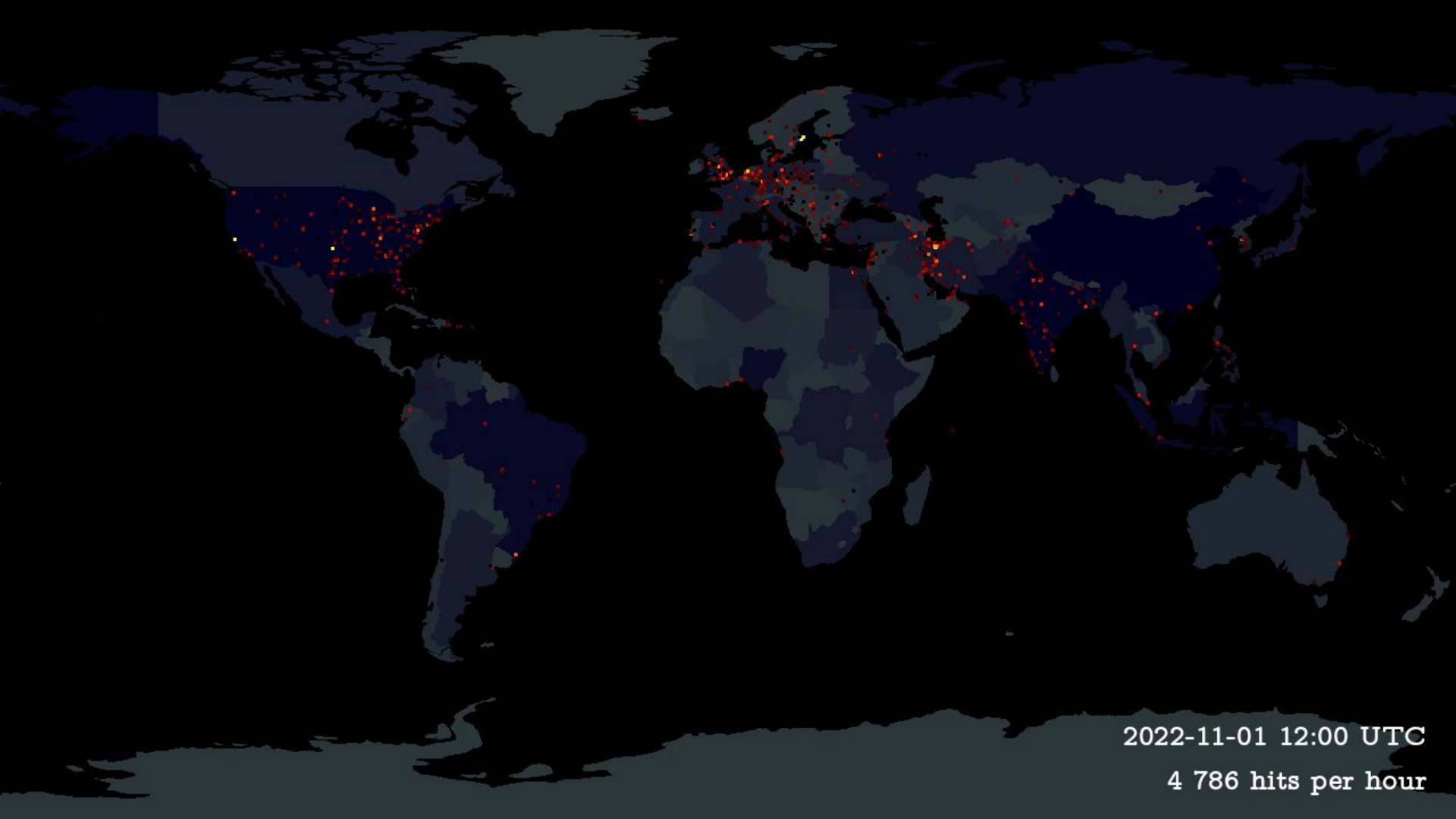
2022-03-01 12:00 UTC

1 677 hits per hour



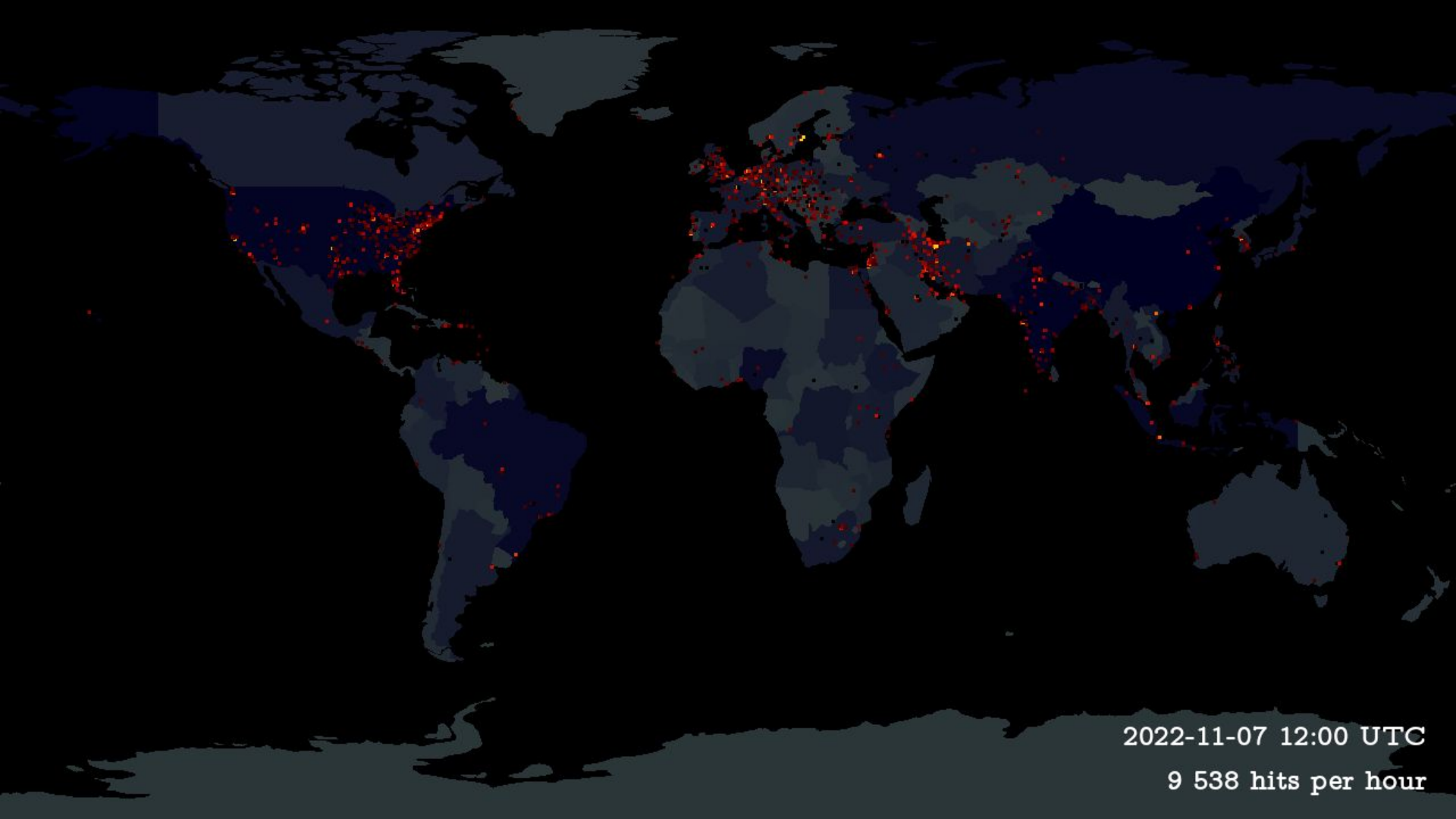
2022-07-01 12:00 UTC

1 507 hits per hour



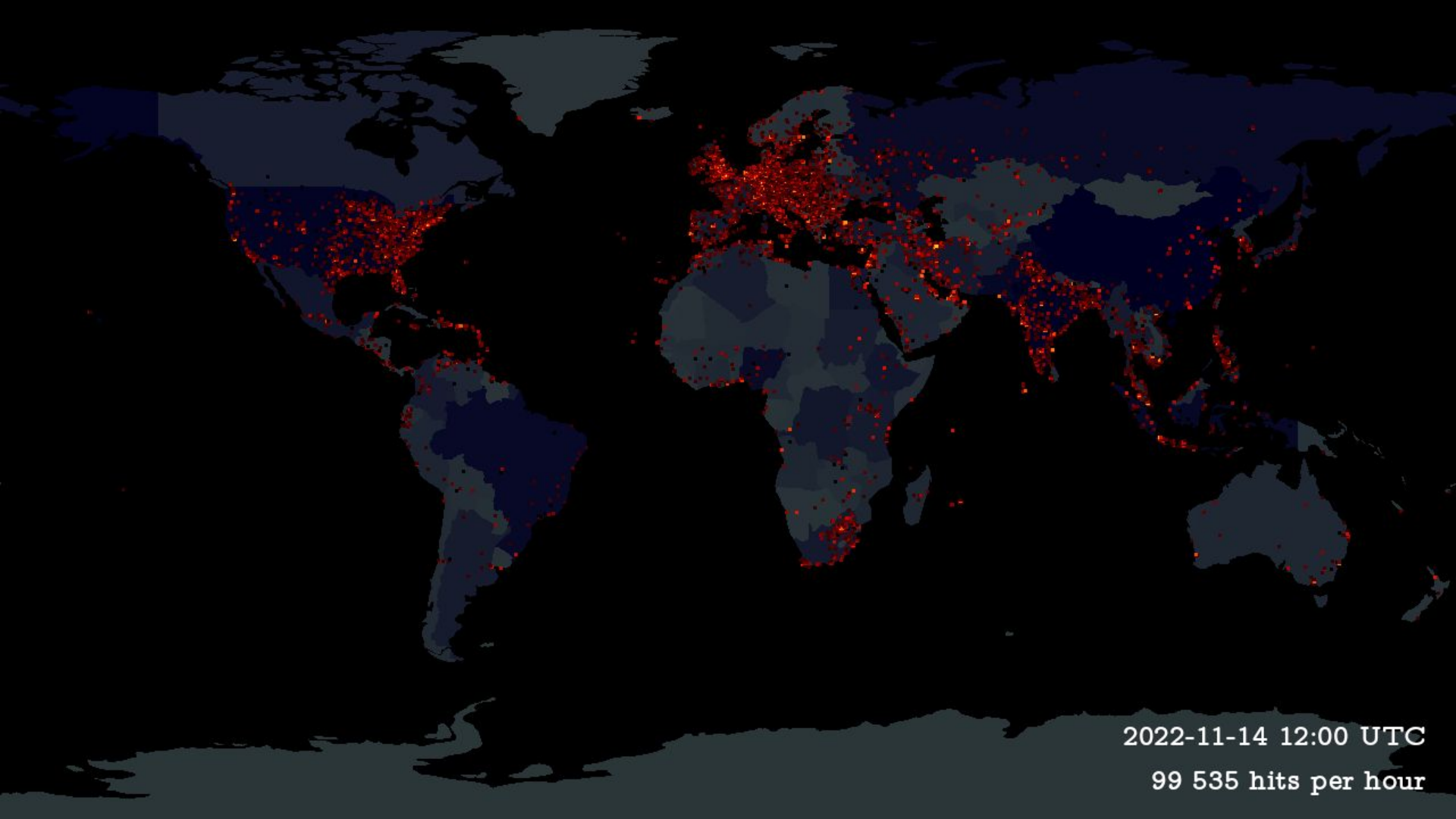
2022-11-01 12:00 UTC

4 786 hits per hour



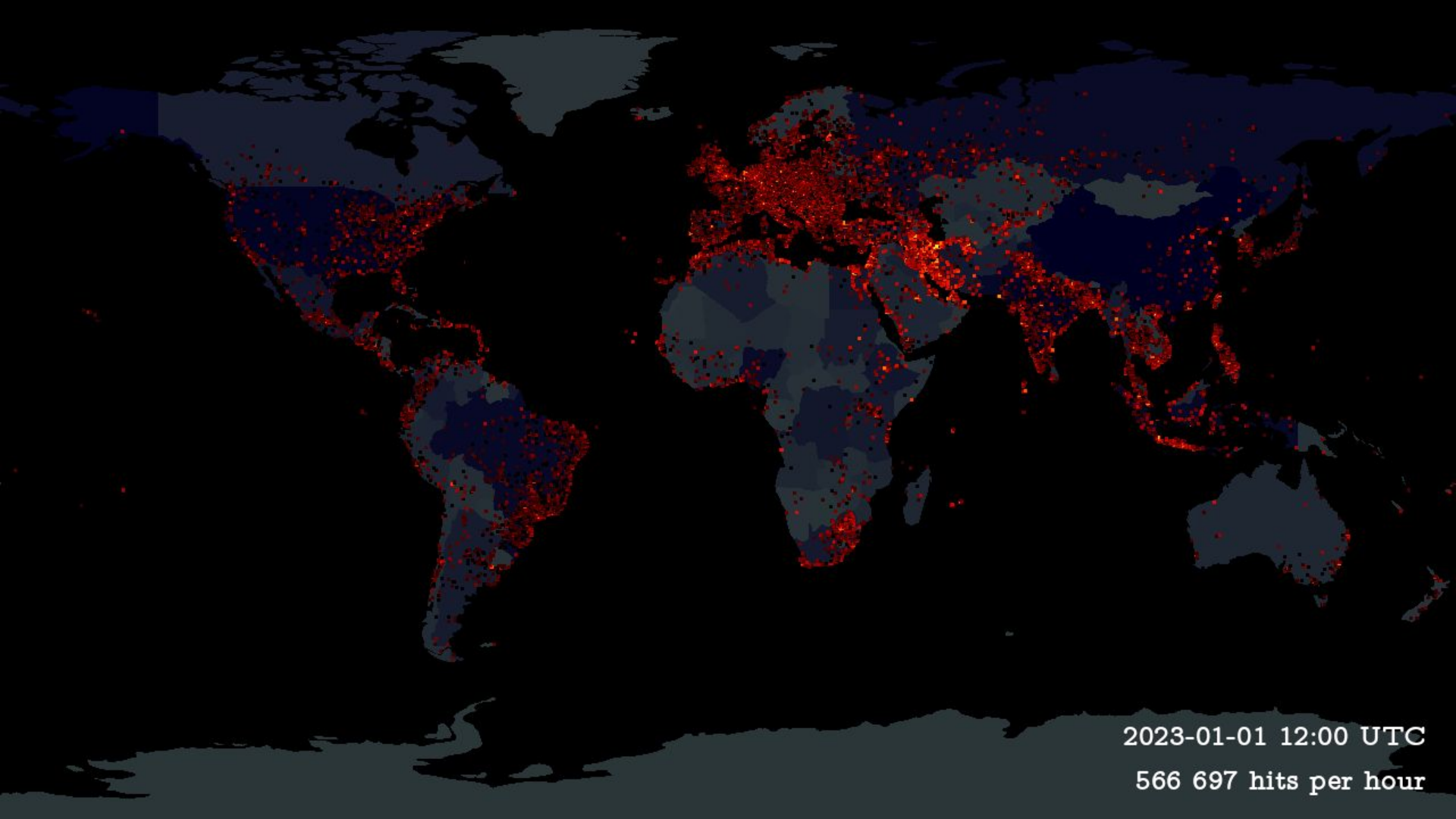
2022-11-07 12:00 UTC

9 538 hits per hour



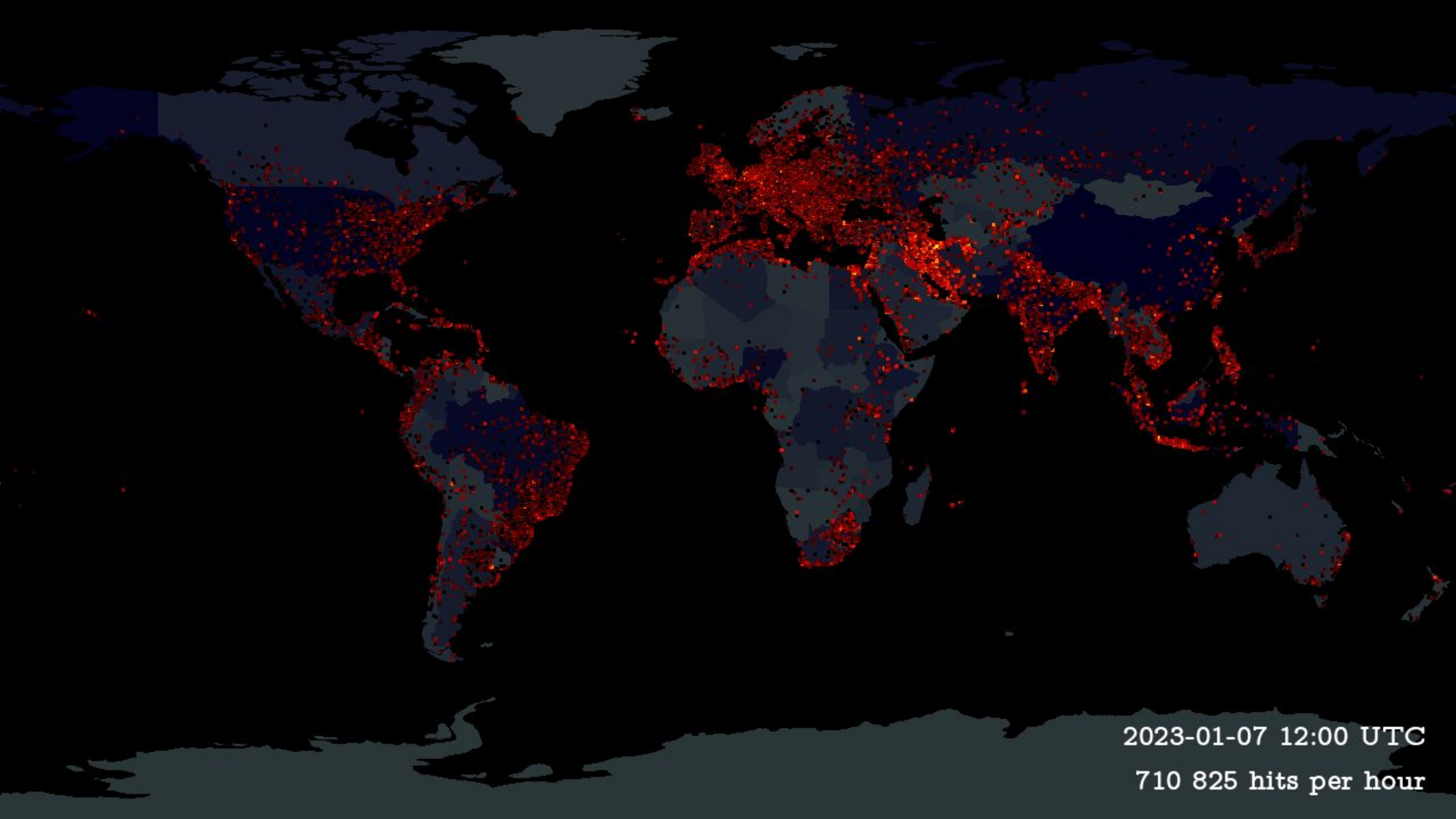
2022-11-14 12:00 UTC

99 535 hits per hour



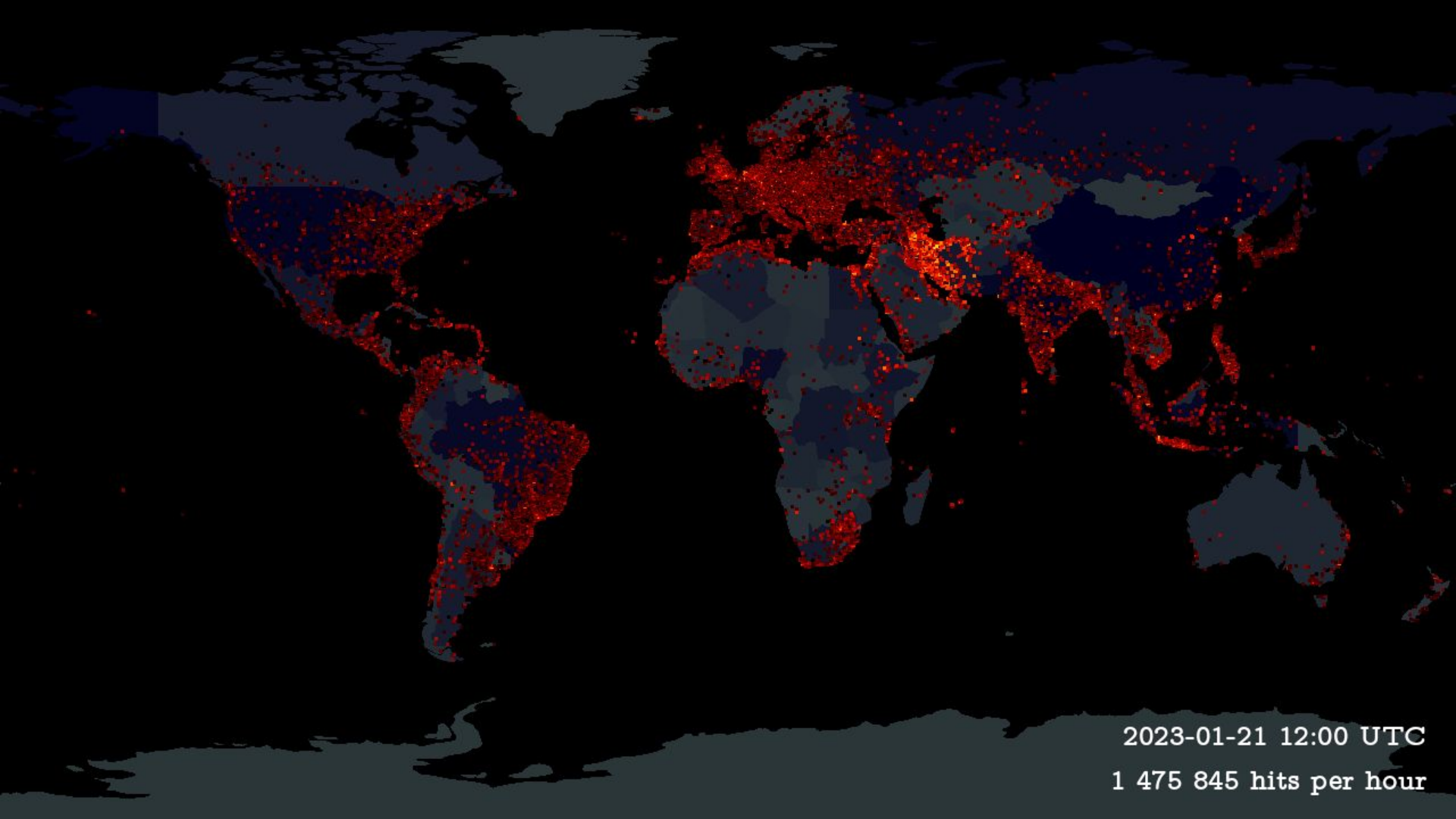
2023-01-01 12:00 UTC

566 697 hits per hour



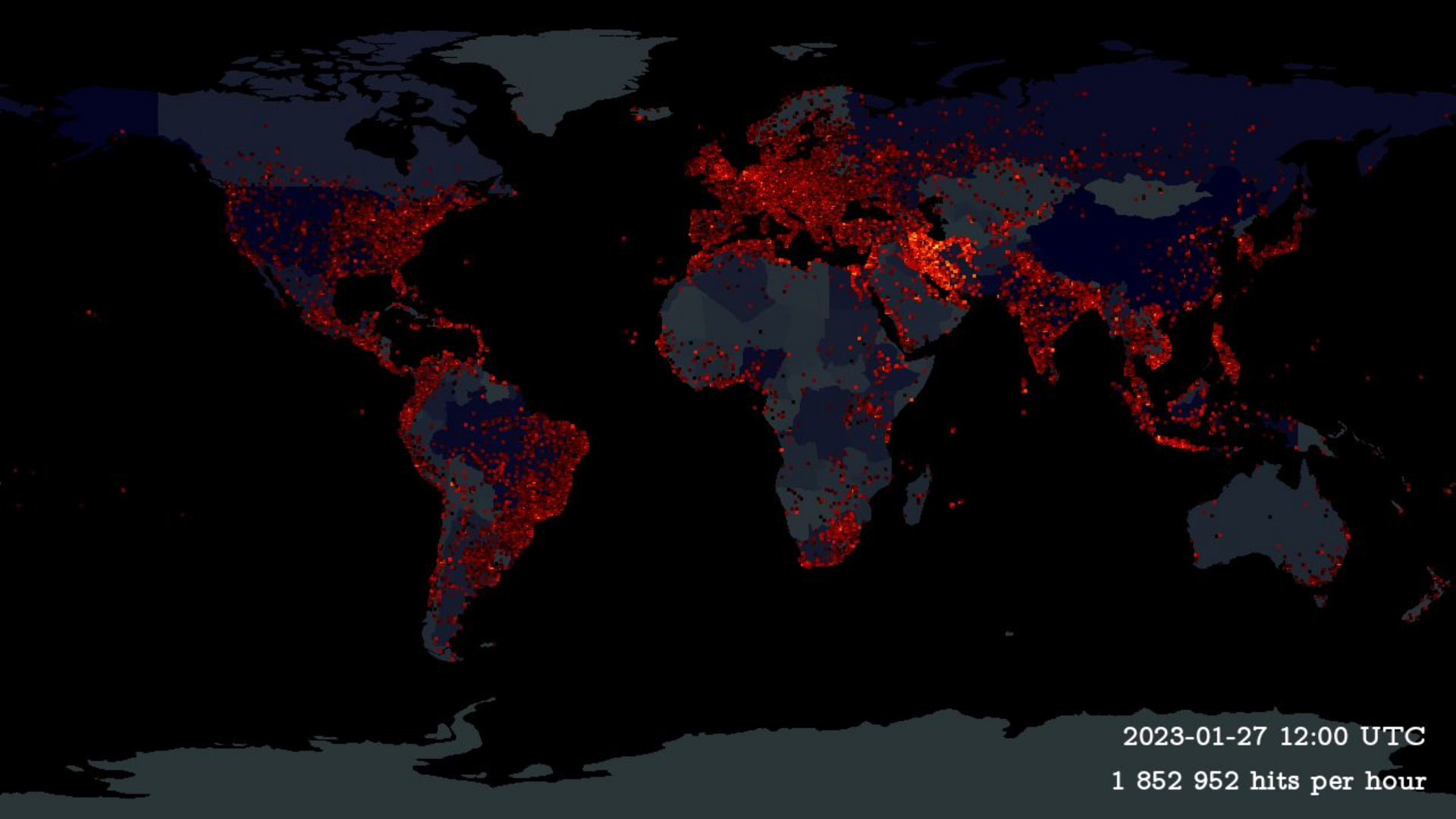
2023-01-07 12:00 UTC

710 825 hits per hour



2023-01-21 12:00 UTC

1 475 845 hits per hour

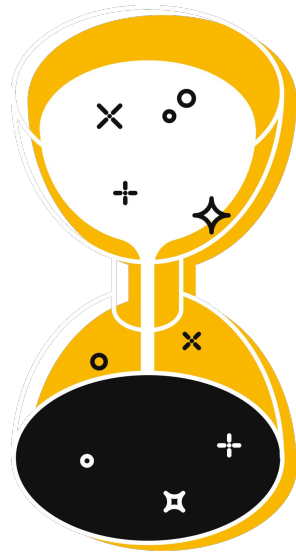


2023-01-27 12:00 UTC

1 852 952 hits per hour

Timeline

- New servers in Stockholm
 - February 2022, 1000-2000 hits per hour, only enthusiasts
- Nothing happened for 8 months
 - Mid October, usage started to rise slowly
- During November usage exploded
 - November 7, 10 000 hits per hour
 - November 14, 100 000 hits per hour
- Usage kept rising until january
 - Mid January, 1 000 000 hits per hour
 - End of January, 2 000 000 hits per hour
- Thousandfold increase in traffic in less than three months
- At least 5 million unique IP addresses



Thanks for listening!

I'm Christer Weinigel <wingel@netnod.se>
feel free to contact me if you have any questions



Visit us at netnod.se