CLOUDFLARE

Sin Luz, Sin Internet

An Internet perspective on the April 28 power outage in Spain & Portugal

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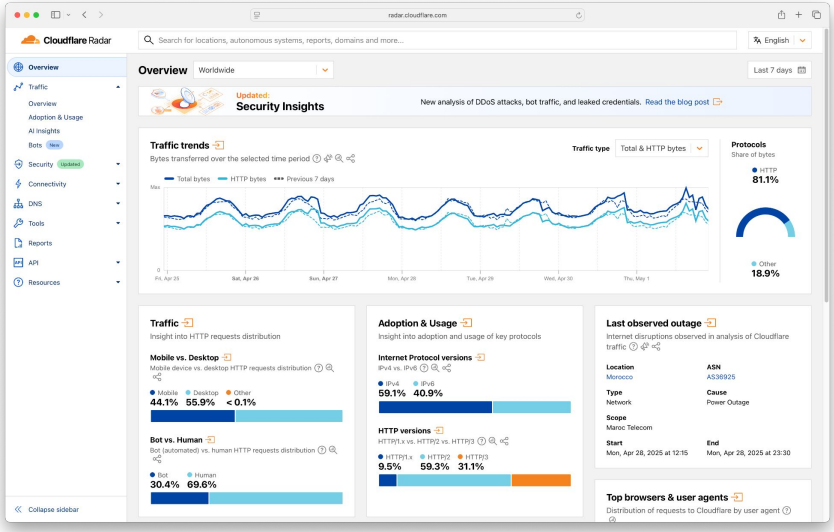
An Internet perspective

How the power outage impacted...

- Traffic
- Connection quality
- Routing (announced IP address space)

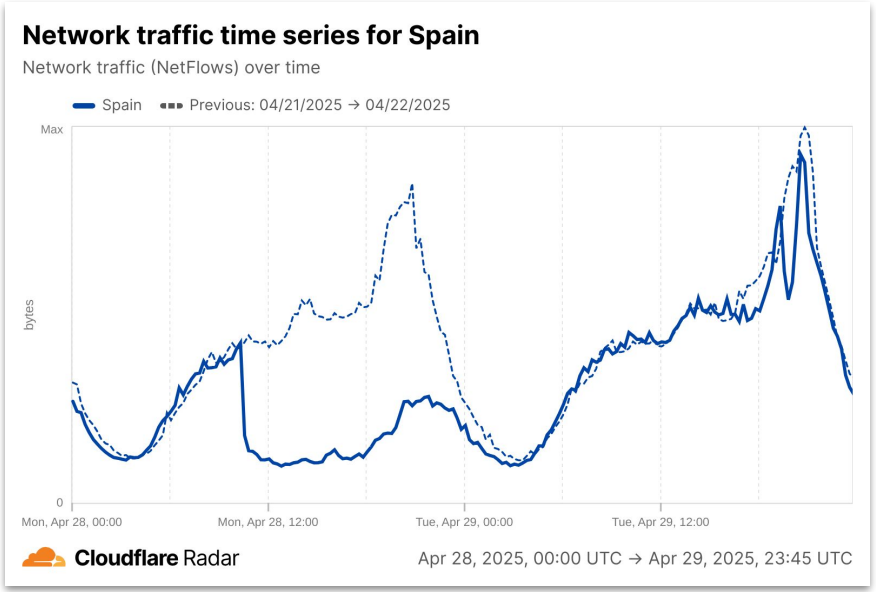
...as seen through Cloudflare Radar

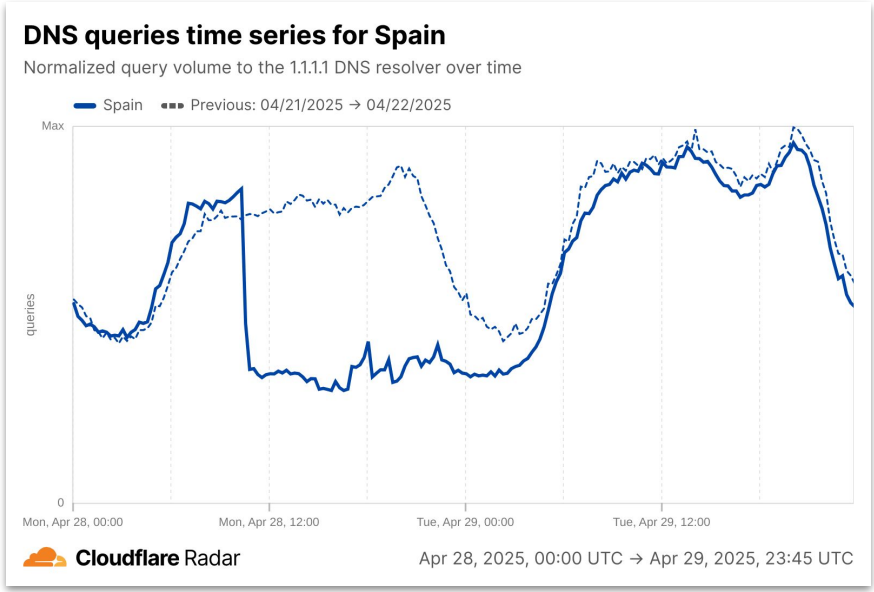


https://radar.cloudflare.com/

(The Routing section on Cloudflare Radar uses RIPE RIS data from RIPE NCC and University of Oregon's RouteViews data.)

Internet traffic: Spain





In the first 30 minutes:

↓ Overall traffic dropped 66%

↓ Resolver traffic fell 57%

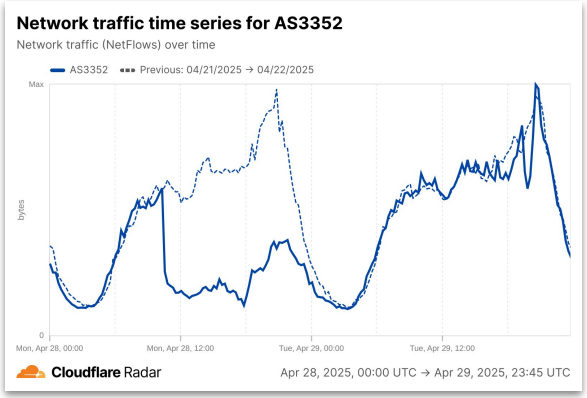
↓ Overall traffic down as much as 75% below the previous week

https://radar.cloudflare.com/explorer?dataSet=netflows&dt=2025-04-28_2025-04-29&loc=ES&timeCompare=2025-04-21

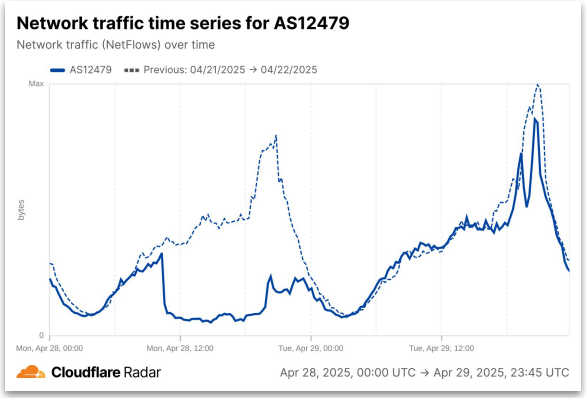
https://radar.cloudflare.com/explorer?dataSet=dns&dt=2025-04-28_2025-04-29&loc=ES&timeCompare=2025-04-21

Internet traffic: Spain

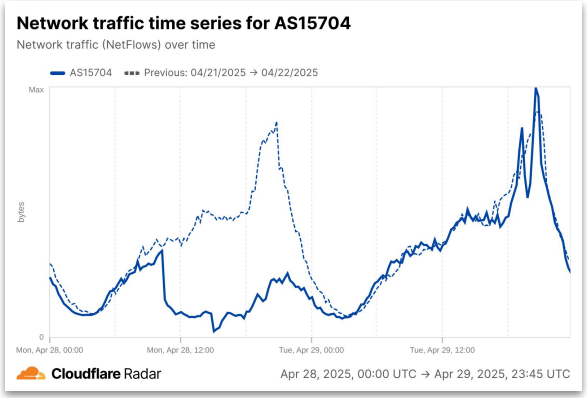
Telefonica de España

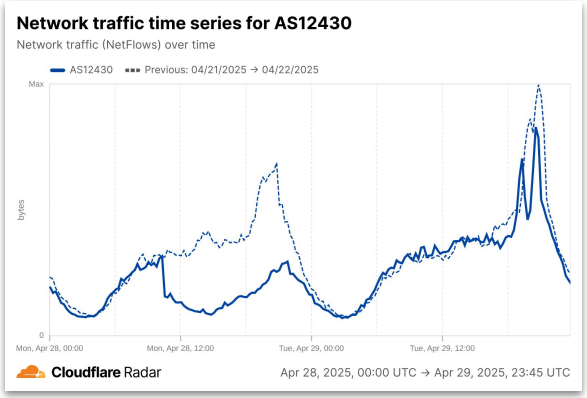


Orange España

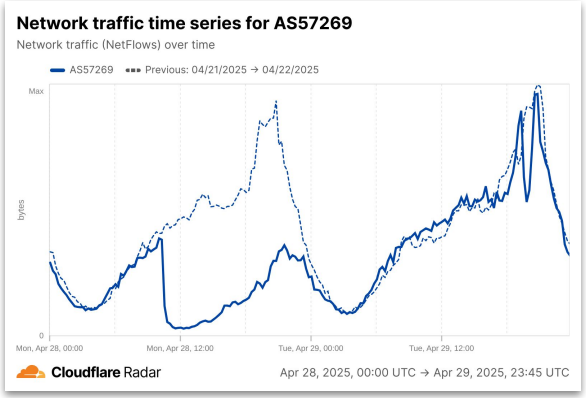


MásMóvil





Vodafone España

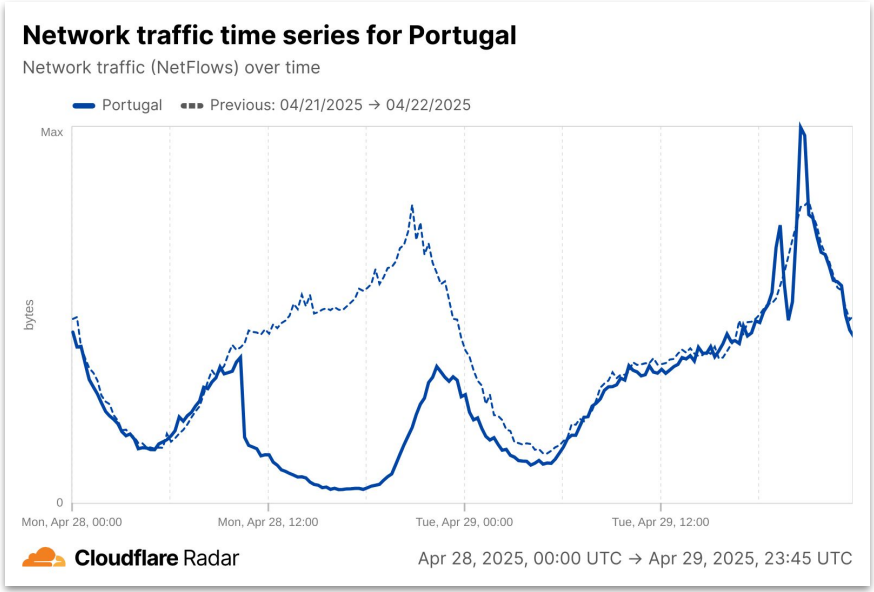


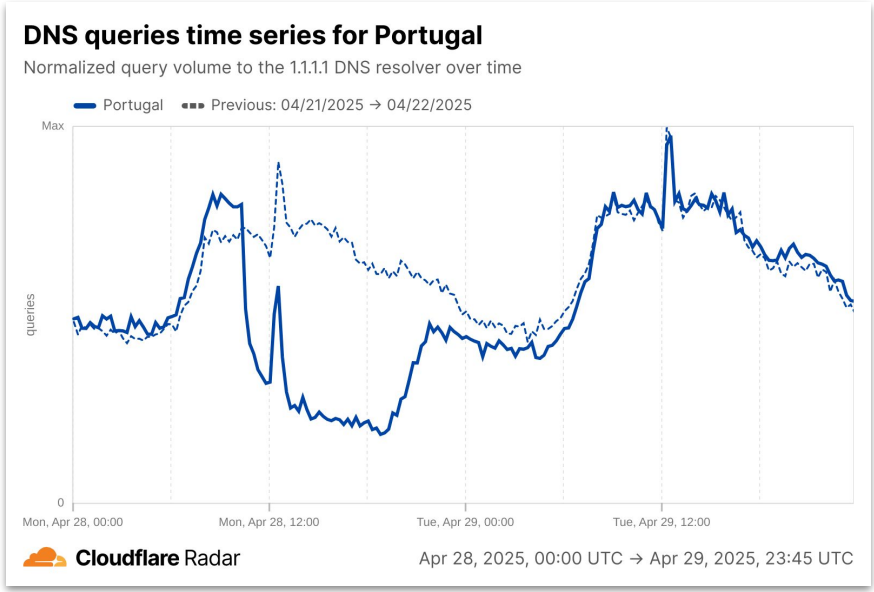
DIGI

In the first 30 minutes, traffic dropped between 51% (AS12430, Vodafone) and 85% (AS57269, DIGI).

https://radar.cloudflare.com/explorer?dataSet=netflows&dt=2025-04-28_2025-04-29&loc=as{AS Number}&timeCompare=2025-04-21

Internet traffic: Portugal





In the first 30 minutes:

↓ Overall traffic dropped 60%

↓ Resolver traffic fell 46%

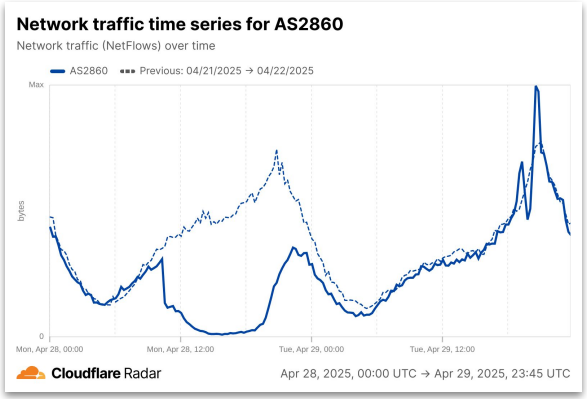
↓ Overall traffic down as much as 93% below the previous week

https://radar.cloudflare.com/explorer?dataSet=netflows&dt=2025-04-28_2025-04-29&loc=PT&timeCompare=2025-04-21

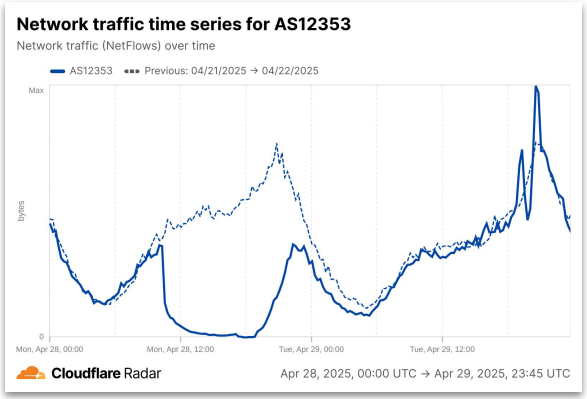
https://radar.cloudflare.com/explorer?dataSet=dns&dt=2025-04-28_2025-04-29&loc=PT&timeCompare=2025-04-21

Internet traffic: Portugal

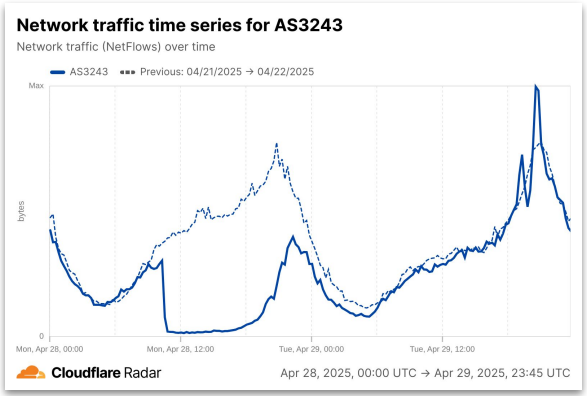
NOS

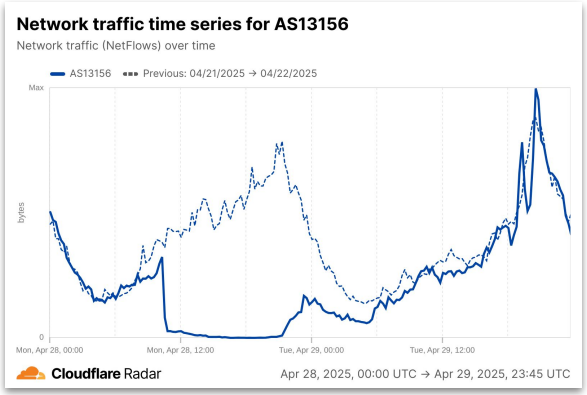


Vodafone

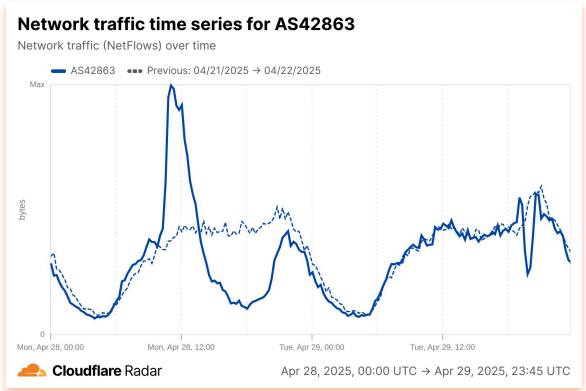


MEO Residential





NOWO (DIGI)



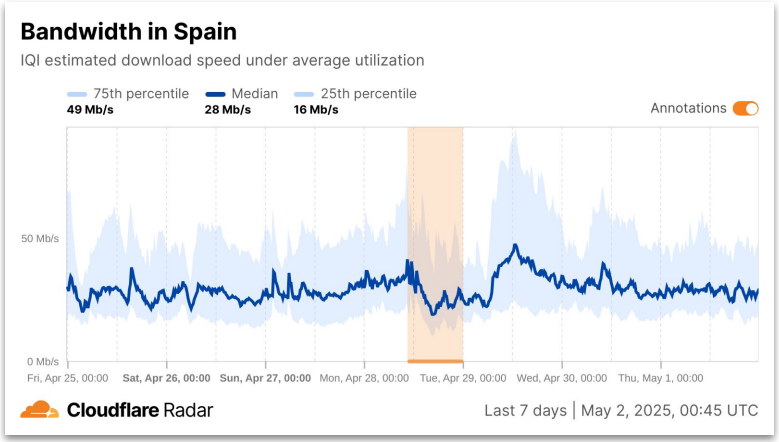
MEO Mobile

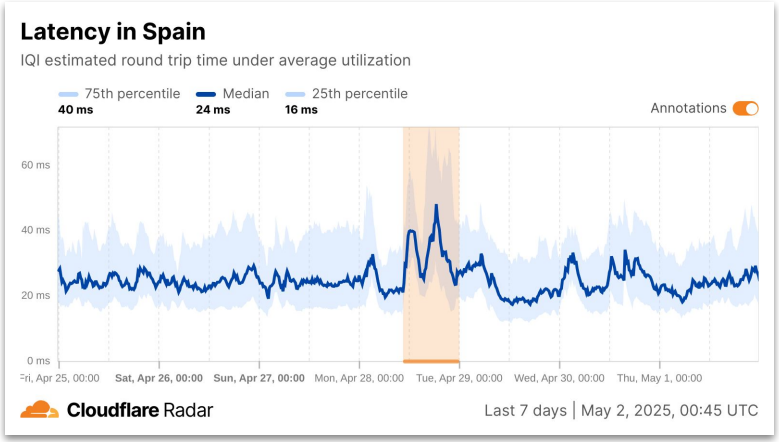
In the first 30 minutes:

- Traffic increased 133% on AS42863 (MEO Mobile), but started falling in the following hour.
- Fell 92% on AS3243 (MEO Residential).
- Fell 62-91% on other ASNs

https://radar.cloudflare.com/explorer?dataSet=netflows&dt=2025-04-28_2025-04-29&loc=as{AS Number}&timeCompare=2025-04-21

Network quality: Spain





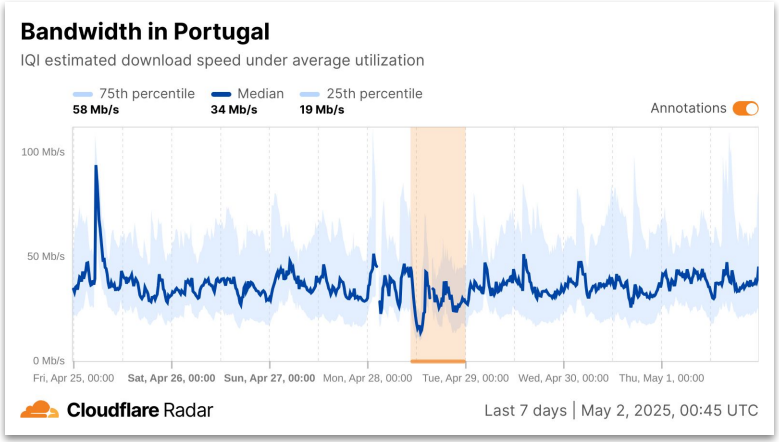
Median download speeds fell from ~35 Mbps to ~19 Mbps

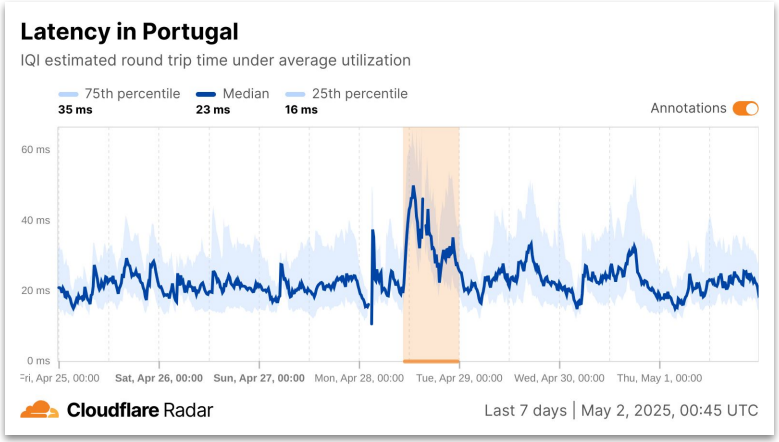
Median latency grew from ~22 ms to as much as 40 ms

https://radar.cloudflare.com/quality/es?dateStart=2025-04-25&dateEnd=2025-05-01#bandwidth

https://radar.cloudflare.com/quality/es?dateStart=2025-04-25&dateEnd=2025-05-01#latency

Network quality: Portugal





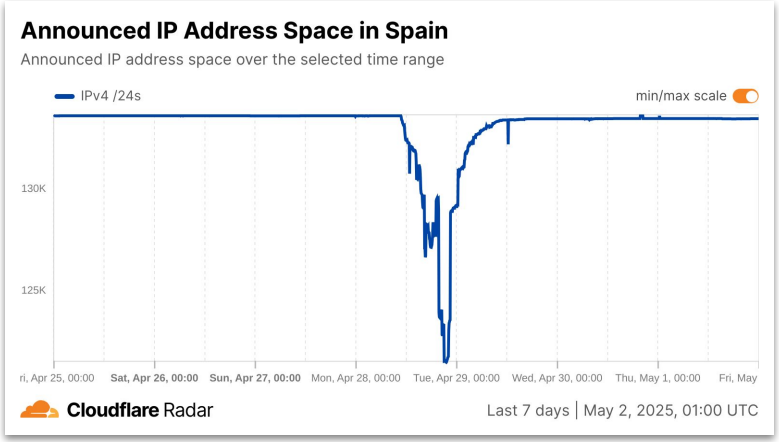
Median download speeds fell from ~40 Mbps to ~15 Mbps

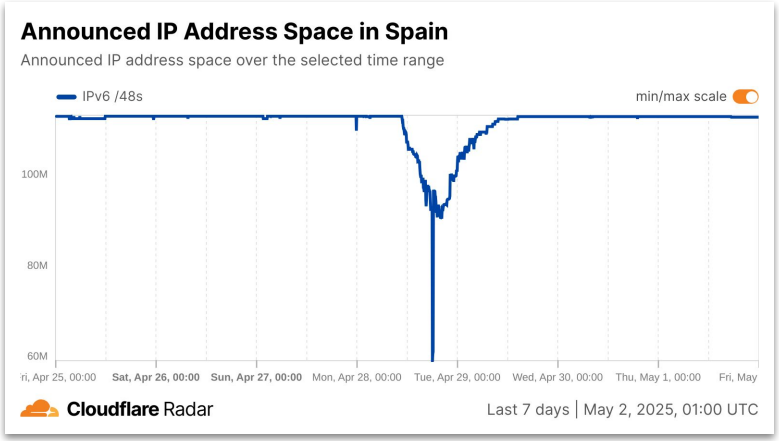
Median latency grew from ~20 ms to as much as 50 ms

https://radar.cloudflare.com/quality/pt?dateStart=2025-04-25&dateEnd=2025-05-01#bandwidth

https://radar.cloudflare.com/quality/pt?dateStart=2025-04-25&dateEnd=2025-05-01#latency

Announced IP address space: Spain





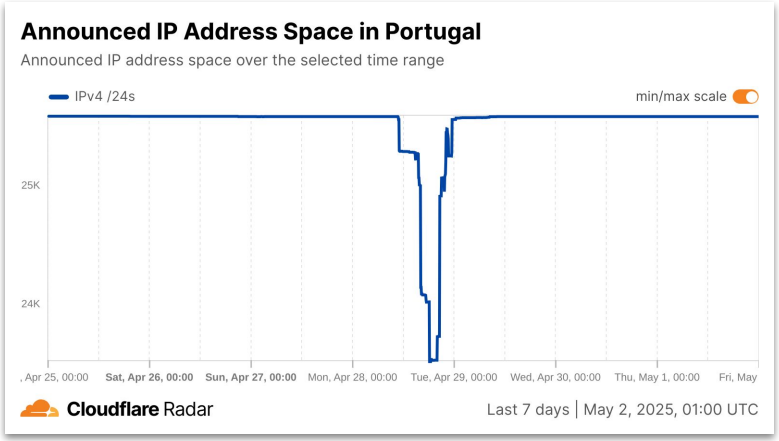
IPv4 fell from 133,617 /24s to a low of 121,552 /24s (-9%)

IPv6 fell from 112,386,540 /48s to a low of 59,145,919 /48s (-47%)

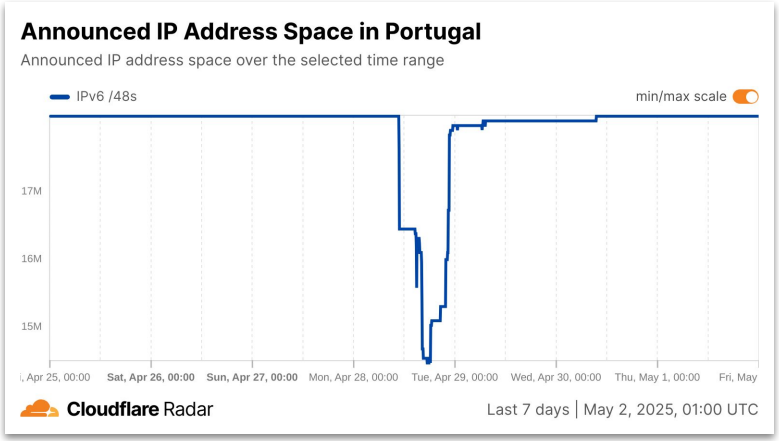
Initial IPv4 drop closer to 5%, and IPv6 closer to 18%.
The IPv4 drop @ 19:30 UTC and the IPv6 drop seen @ 17:50 UTC appear to be due to AS3352 (Telefonica de España).

https://radar.cloudflare.com/routing/es?dateStart=2025-04-25&dateEnd=2025-05-01#announced-ip-address-space

Announced IP address space: Portugal



IPv4 fell from 25,590 /24s to a low of 23,528 /24s (-8%)

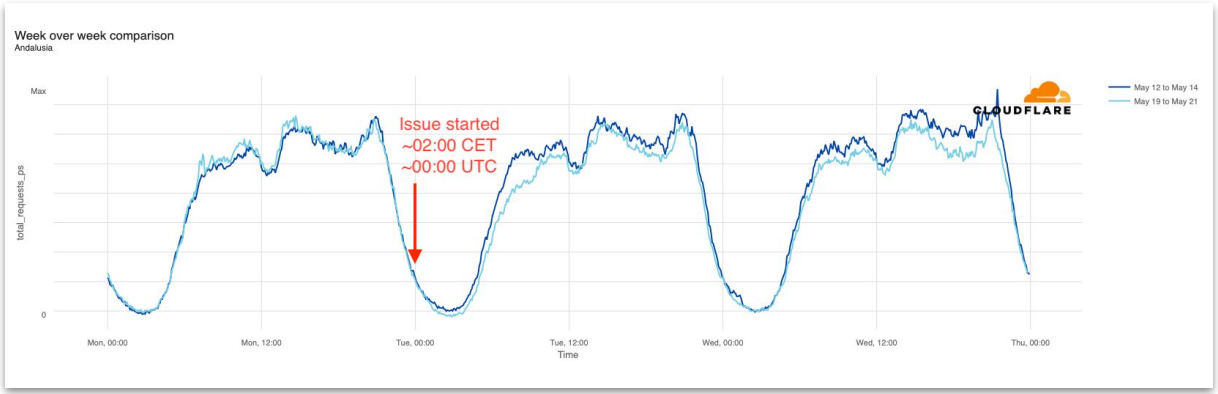


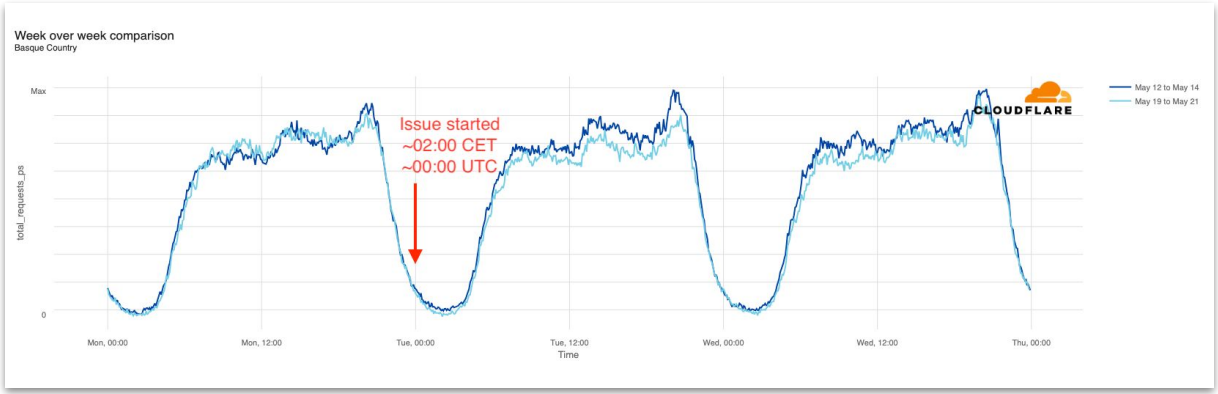
IPv6 fell from 17,928,551 /48s to a low of 14,487,820 /48s (-19%)

The large drops seen on both graphs appear to be due to losses seen across multiple ASNs.

https://radar.cloudflare.com/routing/pt?dateStart=2025-04-25&dateEnd=2025-05-01#announced-ip-address-space

May 20 partial Telefónica outage in Spain





Early traffic losses:

- ~15-20% in Andalusia
- ~10% in Basque Country

Request volumes on AS3352 remained lower than the previous week in these areas throughout the day.

Low regional/network traffic volumes make identifying attributable traffic shifts challenging.

The Cloudflare network

Cloudflare city
(Updated as of Q1 2025)

330
cities in 125+ countries, including mainland China

13,000
networks directly connect to Cloudflare, including every major ISP, cloud provider, and enterprise

388 Tbps
global network edge capacity, consisting of transit connections, peering, and PNI

~50 ms
from 95% of the world's Internet-connected population

https://www.cloudflare.com/network/

Thank you