

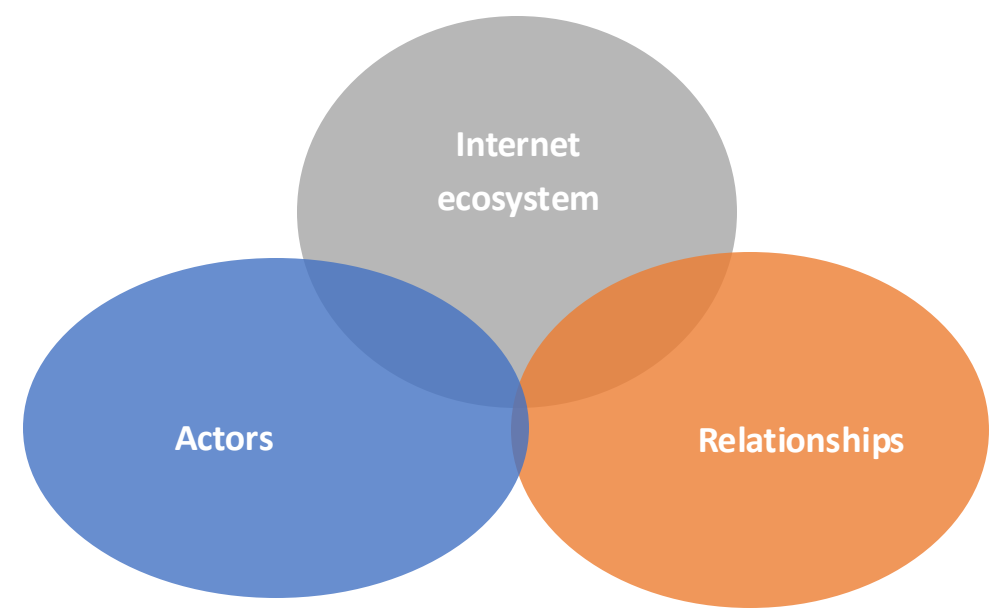
23 May 2025

L'ingegneria delle nuove reti in fibra ottica e Internet Exchange Points

Flavio Luciani / Namex CTO
f.luciani@namex.it

Internet

As a network of networks, the Internet critically depends on proper interconnection among the various participants in the ecosystem.





PeeringDB

Search here for a network, IX, or facility.

Register or [Login](#)

Advanced Search

Amazon.com Diamond Sponsor

Organization	Amazon.com
Also Known As	Amazon Web Services
Long Name	
Company Website	http://www.amazon.com
ASN	16509
IRR as-set/route-set	AS-AMAZON
Route Server URL	
Looking Glass URL	
Network Type	Enterprise
IPv4 Prefixes	6000
IPv6 Prefixes	2000
Traffic Levels	Not Disclosed
Traffic Ratio	Balanced
Geographic Scope	Global
Protocols Supported	Unicast IPv4 Multicast IPv6 servers
Last Updated	2021-10-20T12:54:19Z
Public Peering Info Updated	2021-12-02T20:57:44
Peering Facility Info Updated	2021-11-23T16:21:38
Contact Info Updated	2020-12-01T12:29:55Z
Notes	AWS Peering: https://peering.aws/ Peering requests:



PeeringDB

Search here for a network, IX, or facility.

Register or [Login](#)

Advanced Search

Cogent Communications, Inc.

Organization	Cogent Communications, Inc.
Also Known As	
Long Name	
Company Website	http://www.cogentco.com/
ASN	174
IRR as-set/route-set	
Route Server URL	
Looking Glass URL	http://www.cogentco.com/en/network/looking-glass
Network Type	NSP
IPv4 Prefixes	420000
IPv6 Prefixes	60000
Traffic Levels	100+Tbps
Traffic Ratio	Not Disclosed
Geographic Scope	Global
Protocols Supported	Unicast IPv4 Multicast IPv6 Never via route servers
Last Updated	2021-10-12T23:13:27Z
Public Peering Info Updated	
Peering Facility Info Updated	2021-08-09T08:52:38
Contact Info Updated	2021-10-12T23:13:15
Notes	

Public Peering Exchange Points

Filter

Exchange ID IPv4	ASN IPv6	Speed	RS Peer
No filter matches. You may filter by Exchange , ASN or Speed .			

Private Peering Facilities

Filter

Facility ID ASN	Country City
1-net East	Singapore
174	Singapore
1025Connect	United States of America
174	Westbury
123.NET - DC1 - 24700 Northwestern Blvd.	United States of America
174	Southfield
1500 Chemo	United States of America
174	Denver
151 Front Street West Toronto	Canada
174	Toronto
300 Berc	United States of America
174	Cambridge
365 Data Centers Buffalo (BU1)	United States of America
174	Buffalo
365 Data Centers Chicago (CH5)	United States of America
174	Chicago
365 Data Centers Detroit (DT1)	United States of America
174	Southfield
365 Data Centers Indianapolis (IN1)	United States of America
174	Indianapolis
365 Data Centers Nashville (NA1)	United States of America
174	Nashville
365 Data Centers New York (NY10)	United States of America
174	New York
365 Data Centers Philadelphia (PH2)	United States of America
174	Philadelphia

Peering Policy Information

Peering Policy	
General Policy	No
Multiple Locations	Not Required
Ratio Requirement	No
Contract Requirement	Not Required

Definitions: Content Delivery Network e Internet eXchange Point

CDN (Content Delivery Network)

A distributed network of servers that work together to deliver web and multimedia content to end users quickly and efficiently.

Main functions:

- Reduce latency by improving page load times.
- Deliver content from servers that are geographically close to the user.
- Handle traffic spikes.

Use cases:

- Video streaming, software downloads, e-commerce, online gaming.

Definitions: Content Delivery Network e Internet eXchange Point

IXP (Internet Exchange Point)

A physical infrastructure that enables different Internet service providers (ISPs) and networks to exchange traffic directly.

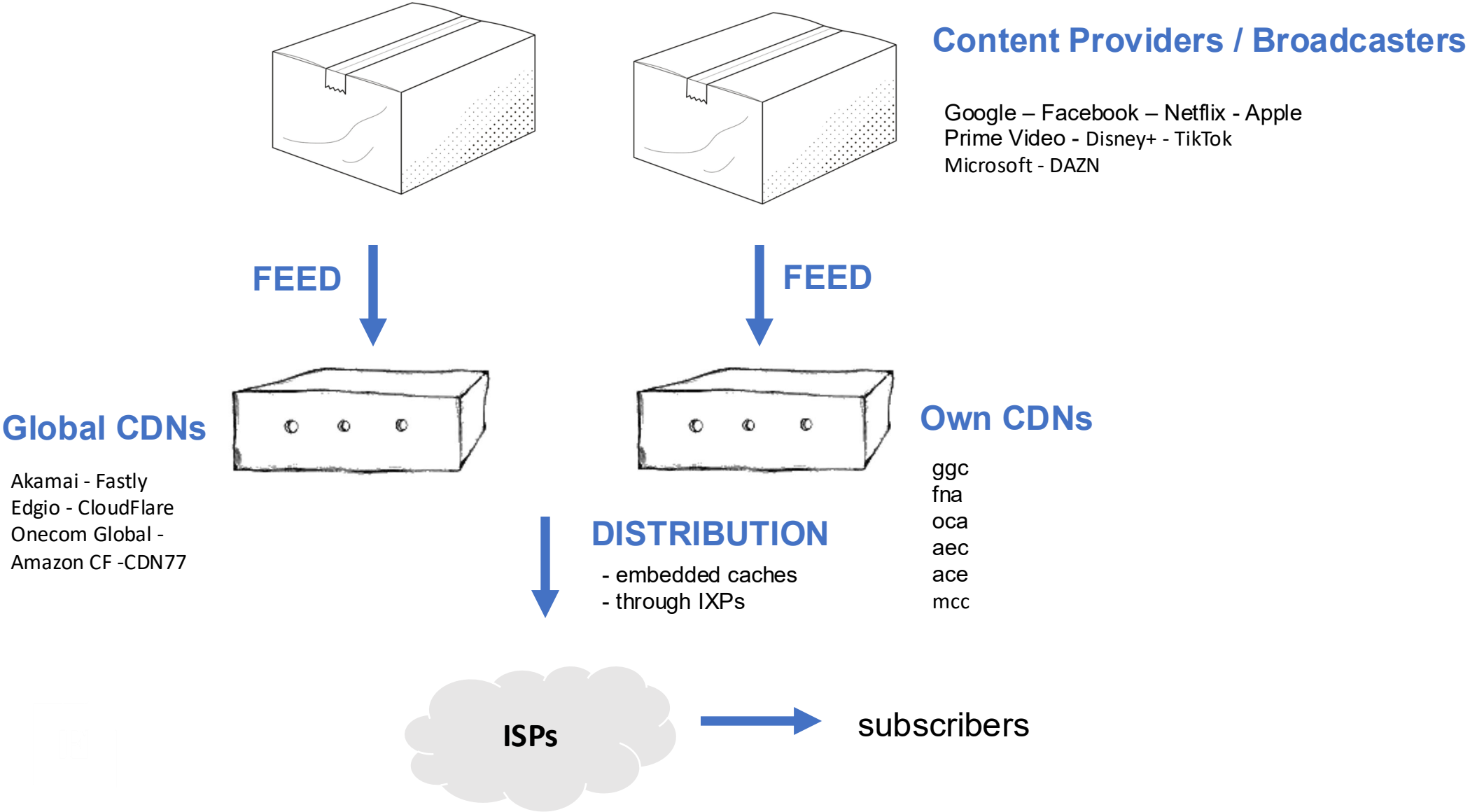
Main functions:

- Improve the efficiency of Internet traffic routing.
- Reduce transit costs through direct interconnection between networks.
- Reduce latency by improving quality of service.

Use cases:

- Namex (Roma), LINX (Londra), IX.br (Brasile).

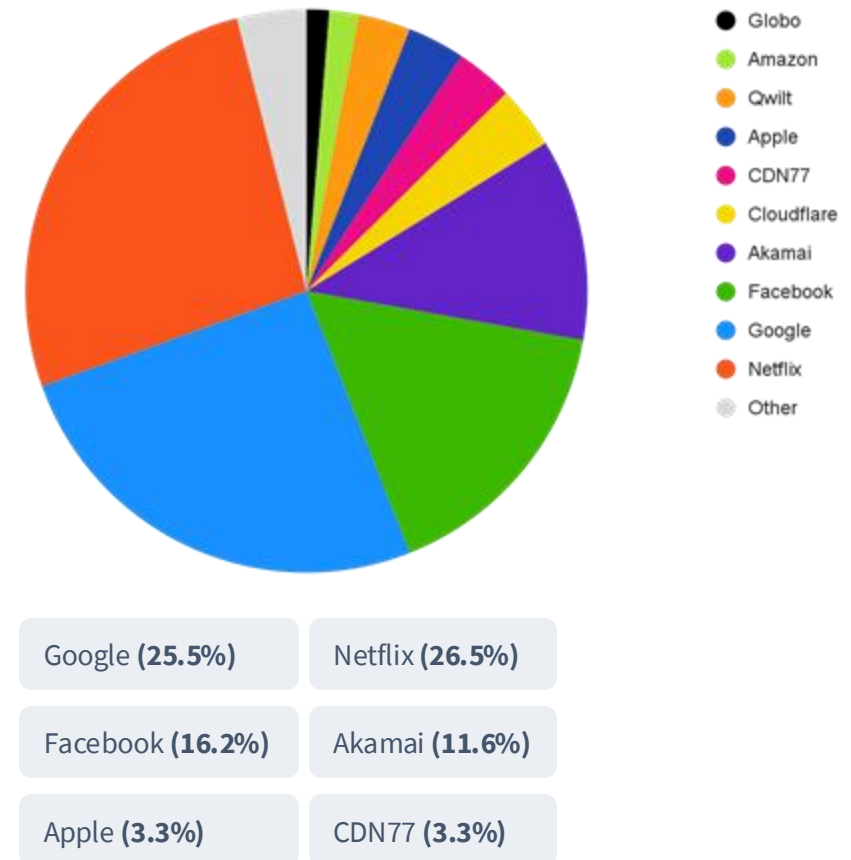
Content Distribution



Content Distribution

Hypergiants that install servers within other networks address fundamental Internet challenges — capacity, latency, and congestion — and reduce the amount of traffic crossing peering interconnections.

Over 3,500 ASNs worldwide have embedded servers



Content Distribution



-  ~74% over the external network border
-  ~14% from embedded servers
-  ~7% embedded to embedded internally in the networks
-  ~5% Externally to embedded

Google



-  Outside to end-users (39%)
-  Embedded to end-users (56%)
-  Outside to embedded (5%)
-  Embedded to embedded (1%)

Facebook



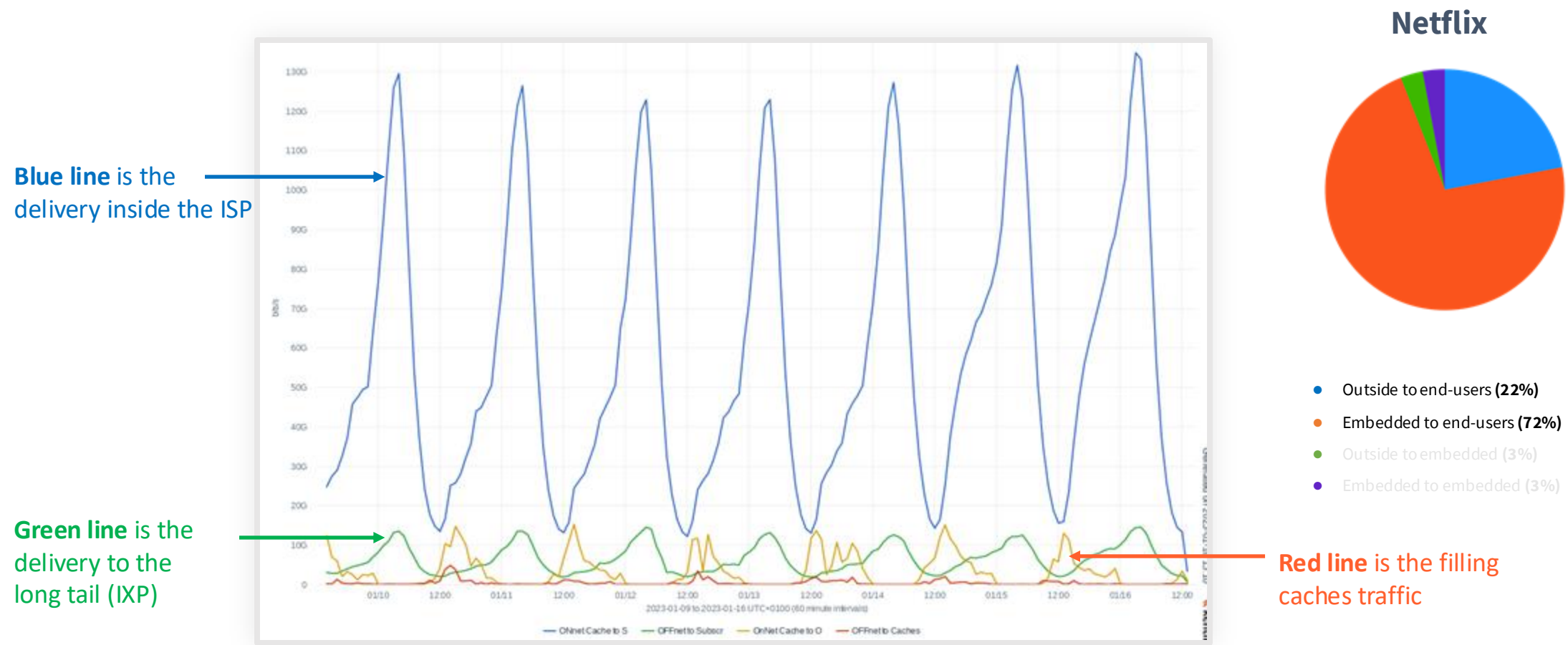
-  Outside to end-users (43%)
-  Embedded to end-users (54%)
-  Outside to embedded (4%)
-  Embedded to embedded (0%)

Akamai



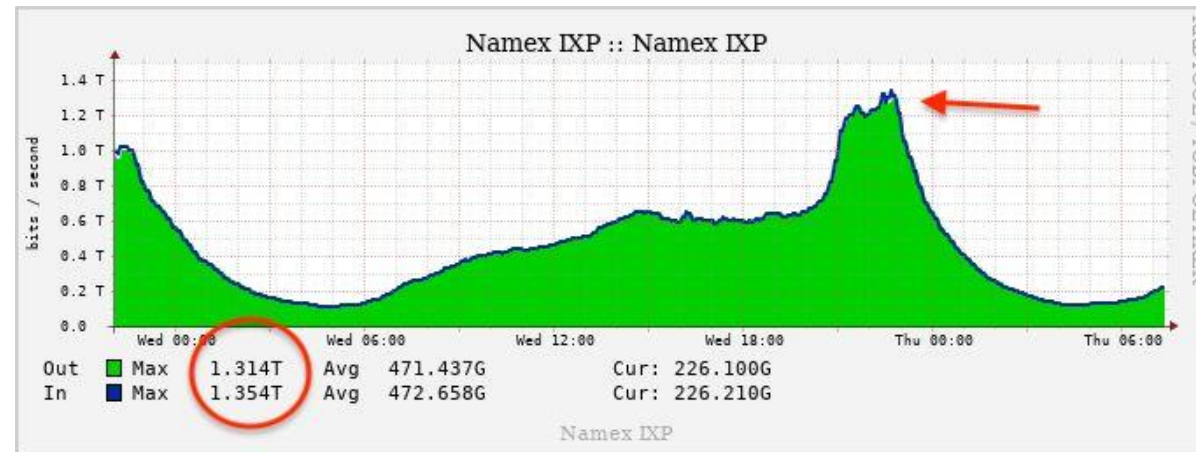
-  Outside to end-users (73%)
-  Embedded to end-users (18%)
-  Outside to embedded (9%)
-  Embedded to embedded (0%)

Content Distribution



Typical Netflix traffic profile in well dimensioned deployment

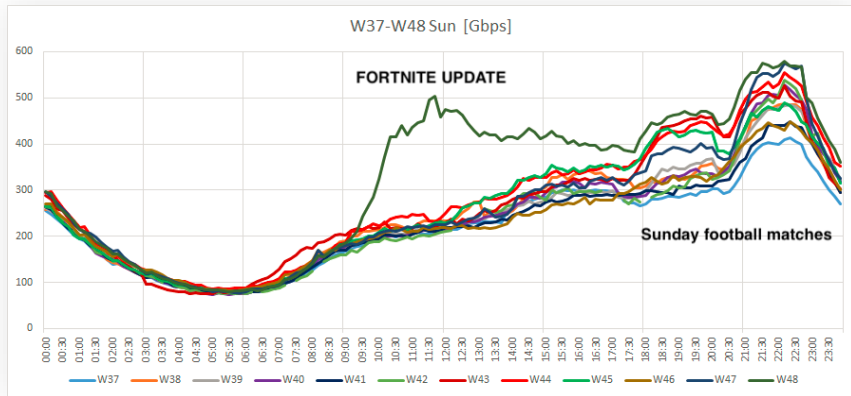
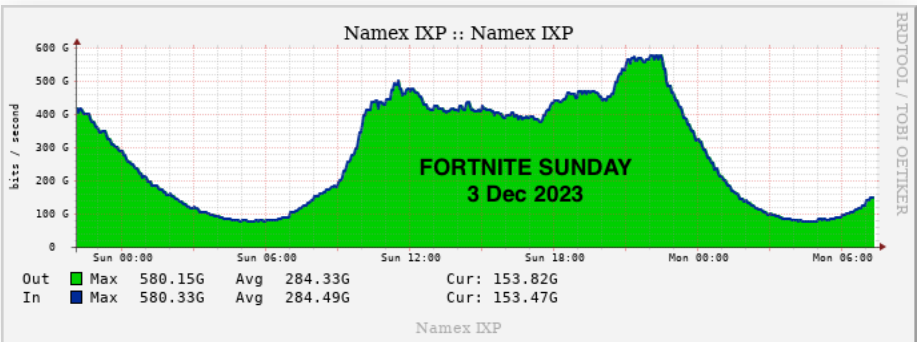
Content Distribution



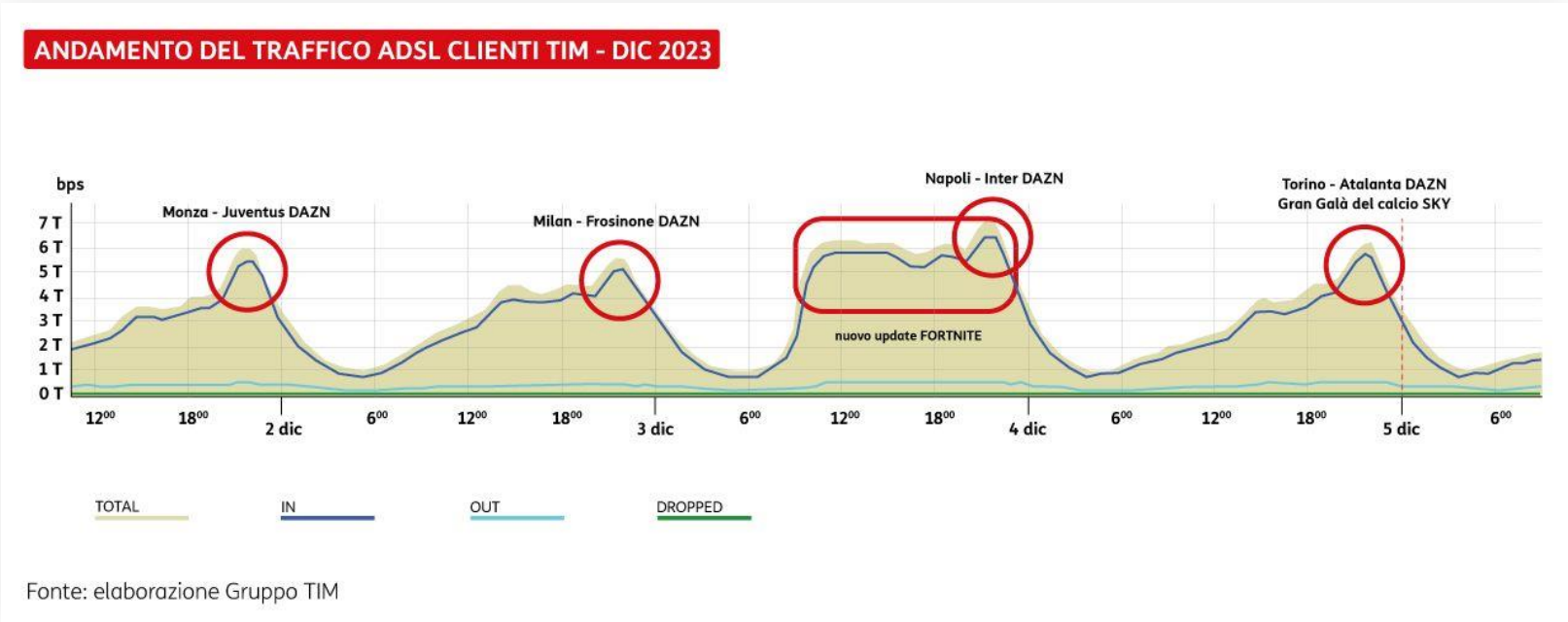
NOTE: The image above shows the typical Internet traffic graph of an IXP. The vertical axis represents the unit of measurement for data transmission speed (Gbps, Gigabits per second), while the horizontal axis shows the timeline (the last 24 hours). Data is collected at regular intervals, typically every 5 minutes. Along with this daily graph, the weekly, monthly, and yearly graphs are often displayed as well. When referring to traffic peaks, it means the highest value in a given time frame. In the image above, for example, the Internet traffic peak is 1.354 Tbps.

https://labs.ripe.net/author/flavio_luciani_1/the-internet-exchange-point-a-window-onto-a-changing-internet/

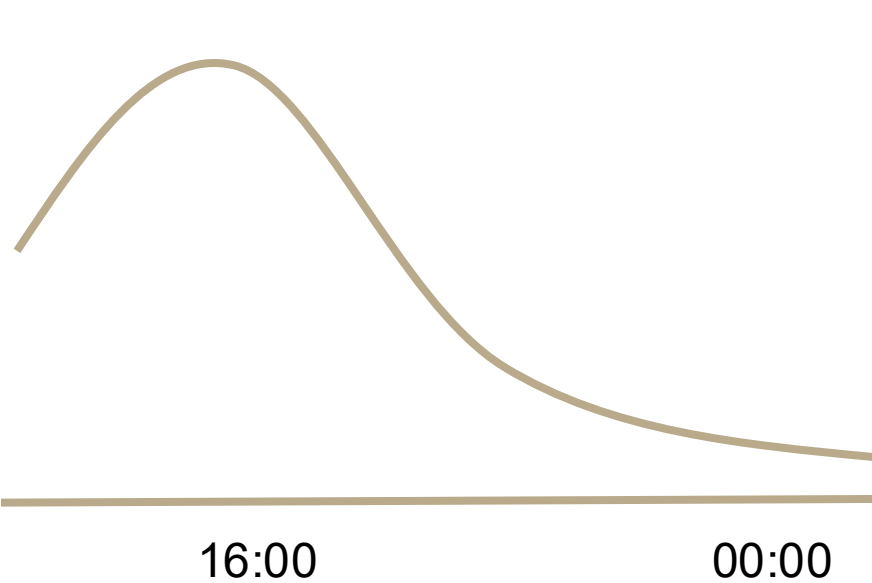
Content Distribution



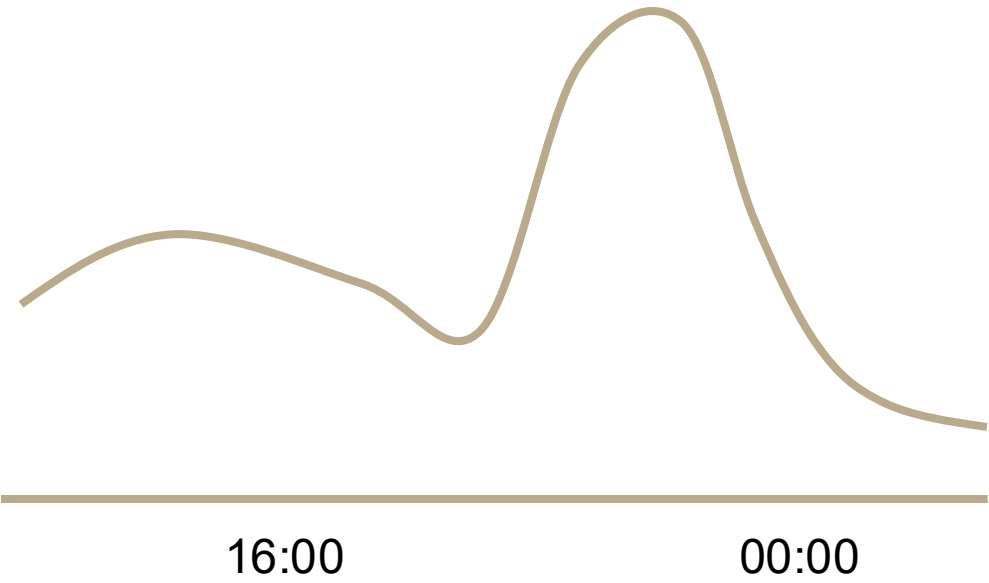
**DAZN edge
(Football) + Akamai
(Fortnite)**



Content Distribution

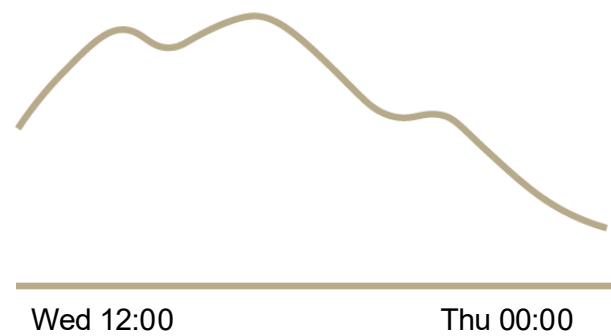


Until 2012

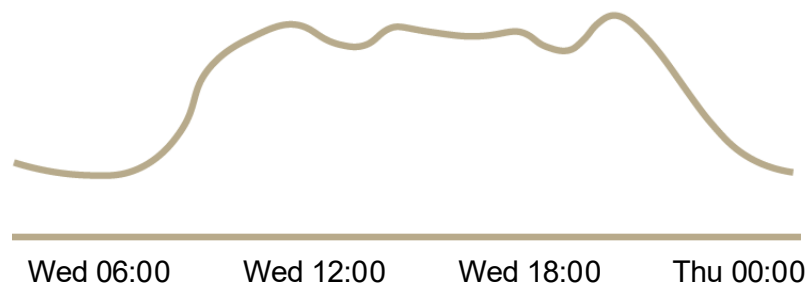


Then

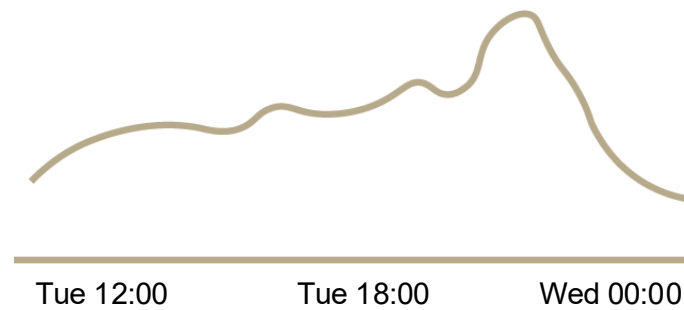
Content Distribution



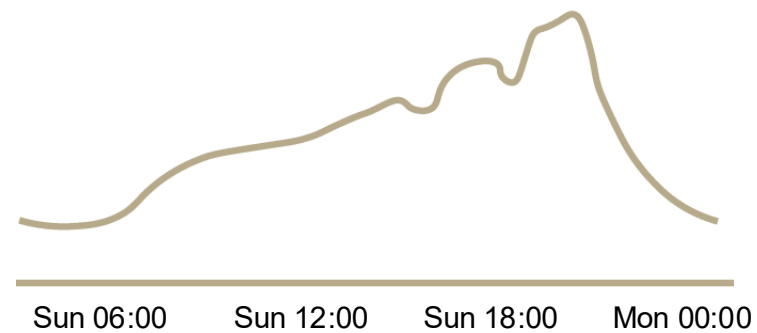
Prehistory
No series and movies on internet
(Until 2012)



Health Emergency #covid
(2020)



Entertainment services #ondemand
(2012 until today)

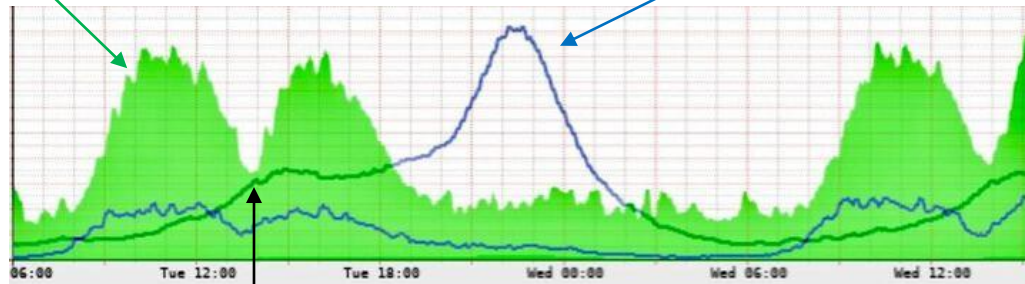


Entertainment services + live streaming
(2021)

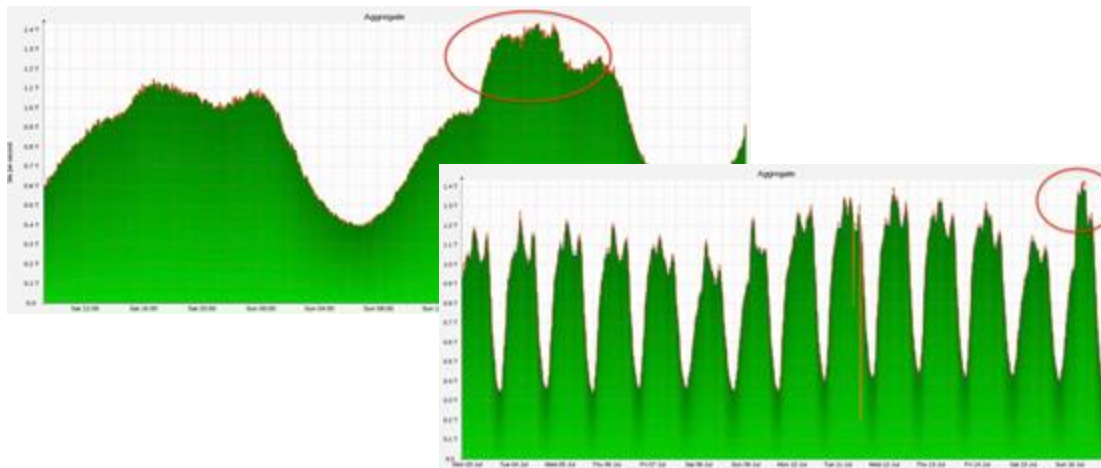
Content Distribution

Green line is Microsoft

Blue line is Netflix

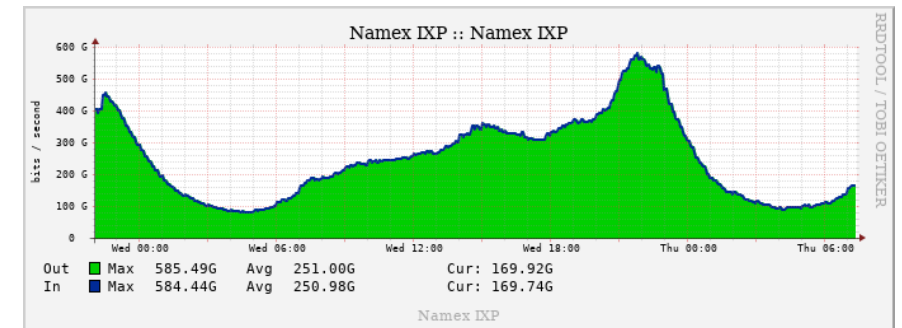
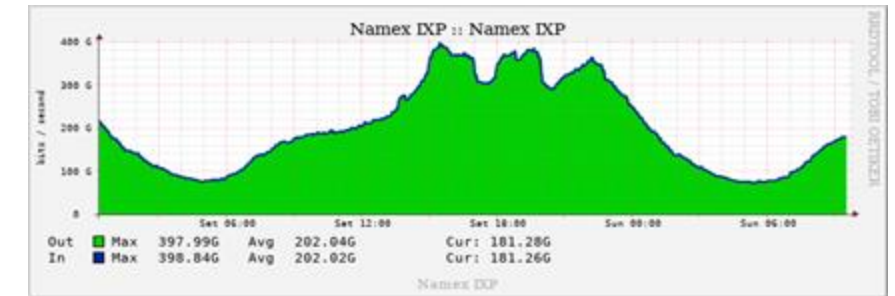


Lunch break

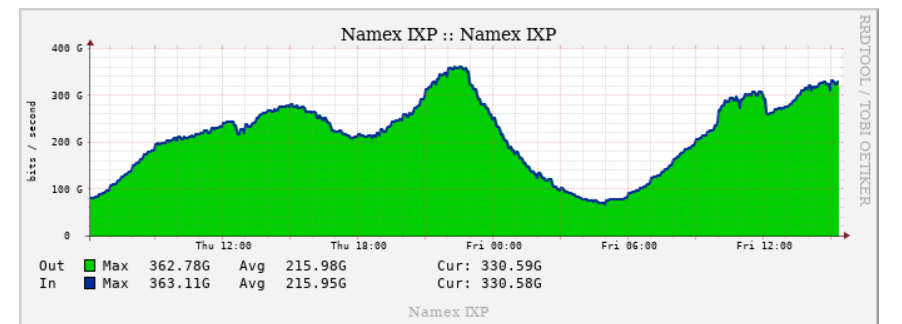


Wimbledon Final – Graph from Barcelona IXP

A Sunday with DAZN / Italian Serie A. Three matches

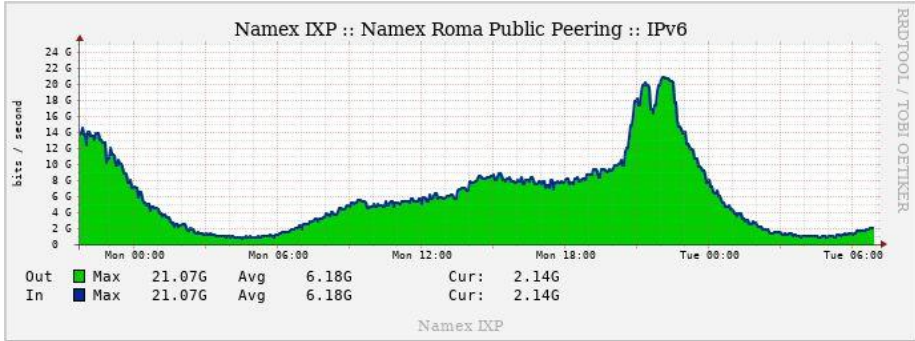
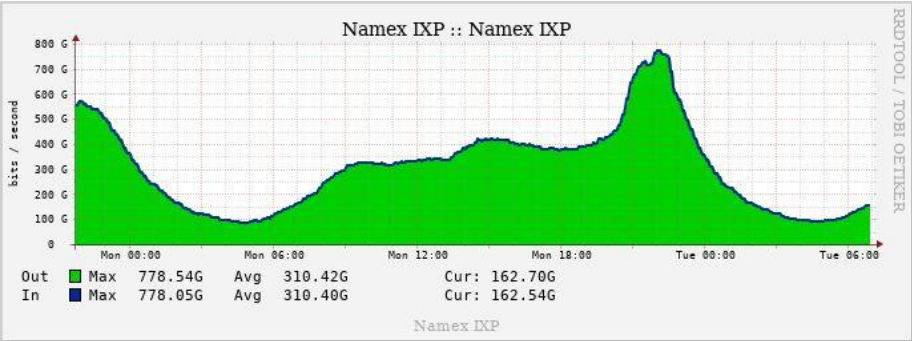


UEFA – Salisburgo – Inter (nov_2023)

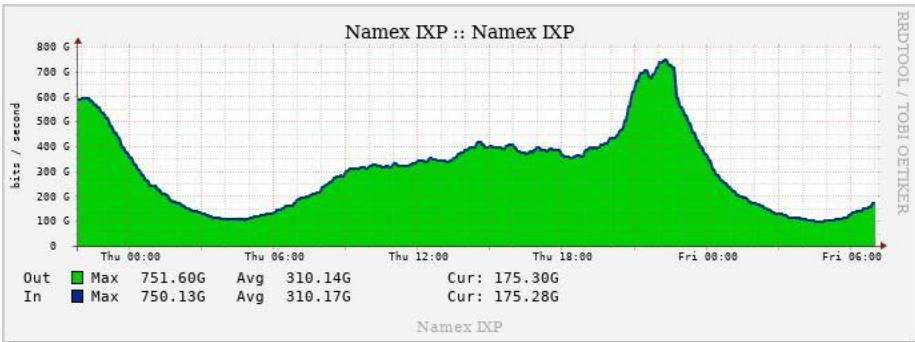


Italy – Serbia broadcasts by RAIPLAY (midday)

Content Distribution

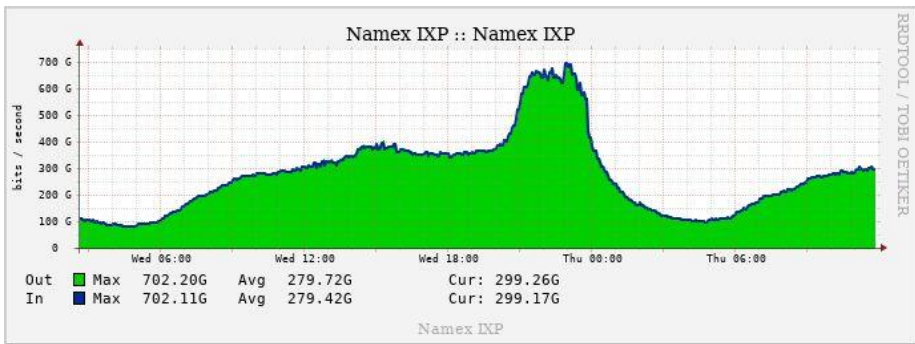


Nations League, Italy-Israel. Broadcast by [RaiPlay](#), RAI's digital platform. CDN: Mainstreaming

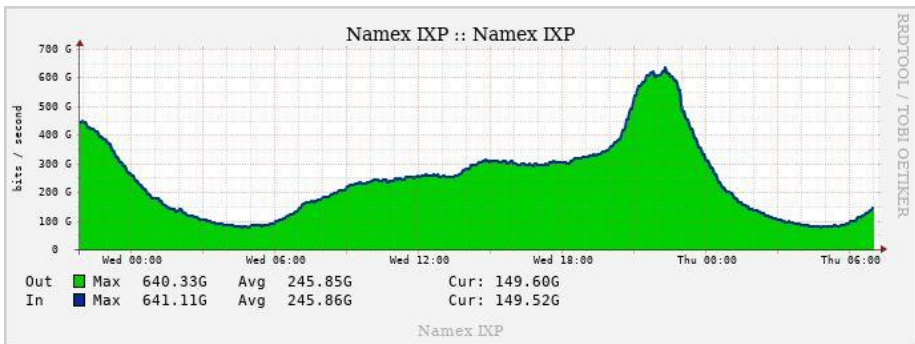


Italy - Belgium

Content Distribution

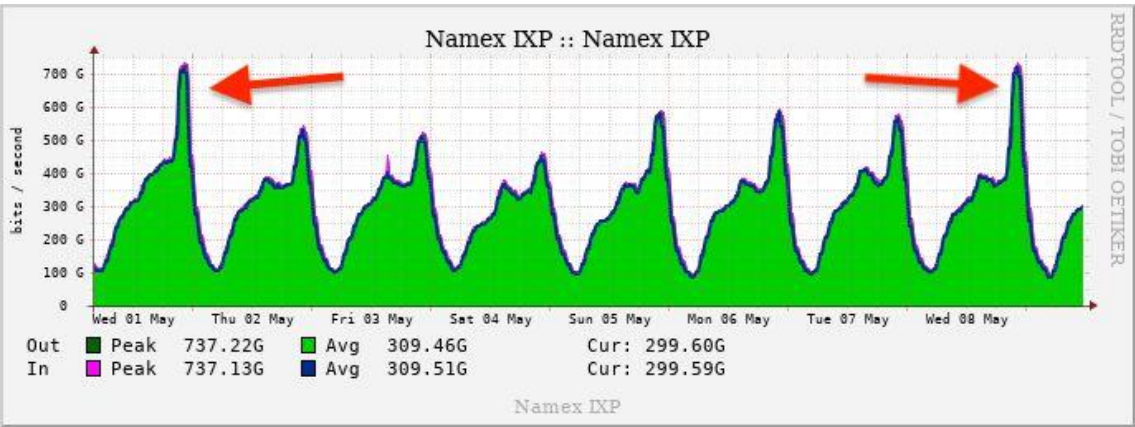


Man City VS Real Madrid (April 2024)



Barcellona VS Napoli (March 2024)

UEFA Champions League



Content Distribution

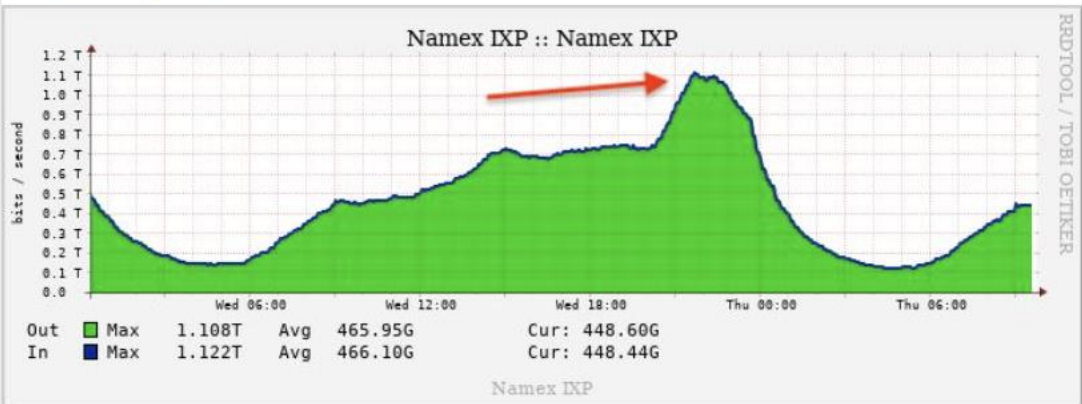


Flavio Luciani · Tu
Chief Technology Officer at Namex
1m · 🌐

Yesterday evening, during the match between Atlético Madrid and Real Madrid, streamed exclusively on [#Amazon](#) Prime Video, Internet traffic on [Namex](#) reached its previous record of 1.122 Tbps.

The [#CDNs](#) distributing the event hit their all-time highs in Rome, confirming the growing impact of [#streaming](#) on network infrastructure, especially for major sporting events.

[#peering](#) [#ixp](#)



Flavio Luciani · Tu
Chief Technology Officer at Namex
2s · 🌐

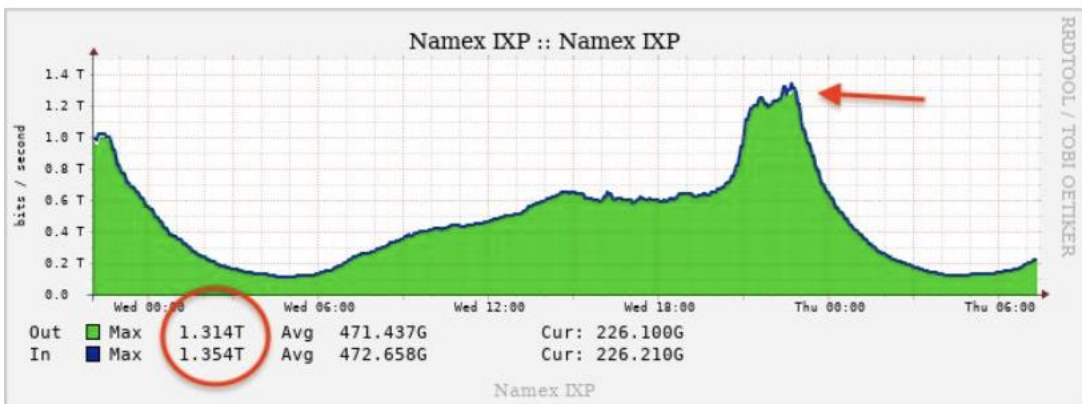
Last night, during the Champions League match between Inter and Bayern Munich broadcast by [#Amazon](#) Prime Video, we recorded our highest peak ever here at [Namex](#)!

Our public [#peering](#) infrastructure hit 1.354 Tbps — a new all-time record — reflecting how much it's grown over the years.

Live [#streaming](#) drives a significant amount of traffic, and on nights like this, it adds up on top of the usual on-demand entertainment services.

By now, most of the major Content Providers and Content Delivery Networks are present here in Rome — with some of them exclusively connected through Namex.

Rome is growing, Namex is growing, and the backbone of network operators connected to our platform forms a united community that evolves with us!



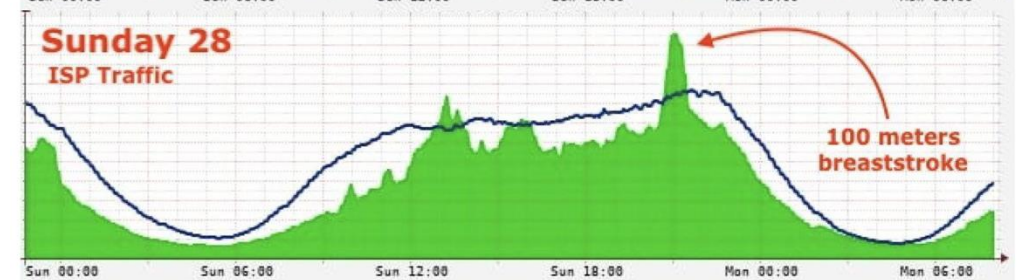
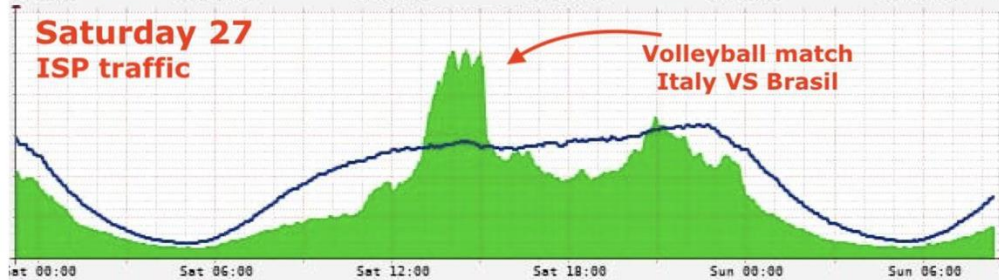
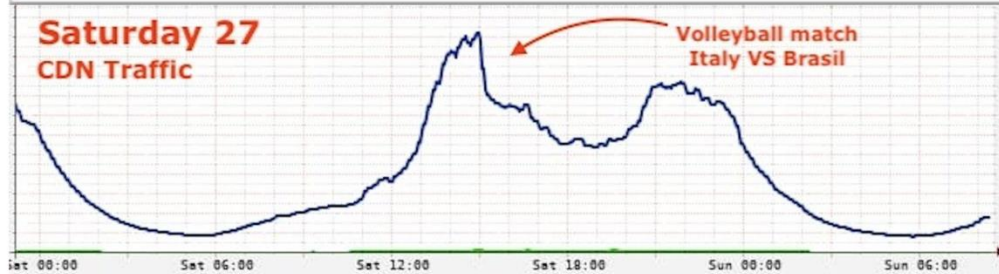
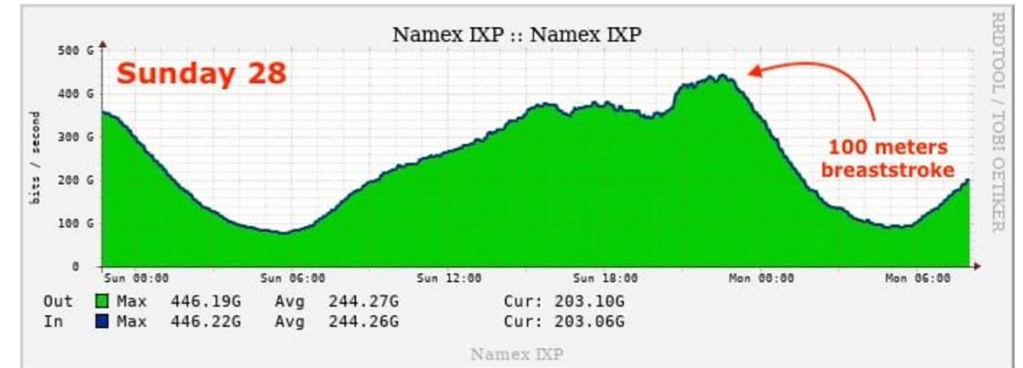
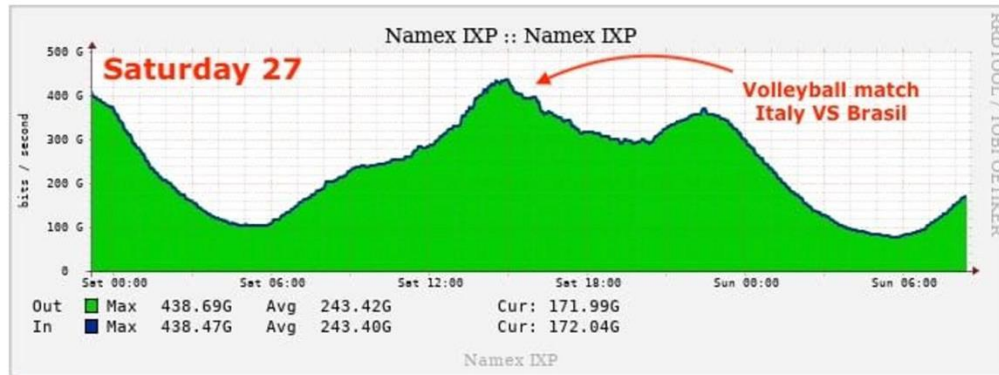
👍👍👍 224

2 commenti · 3 diffusioni post

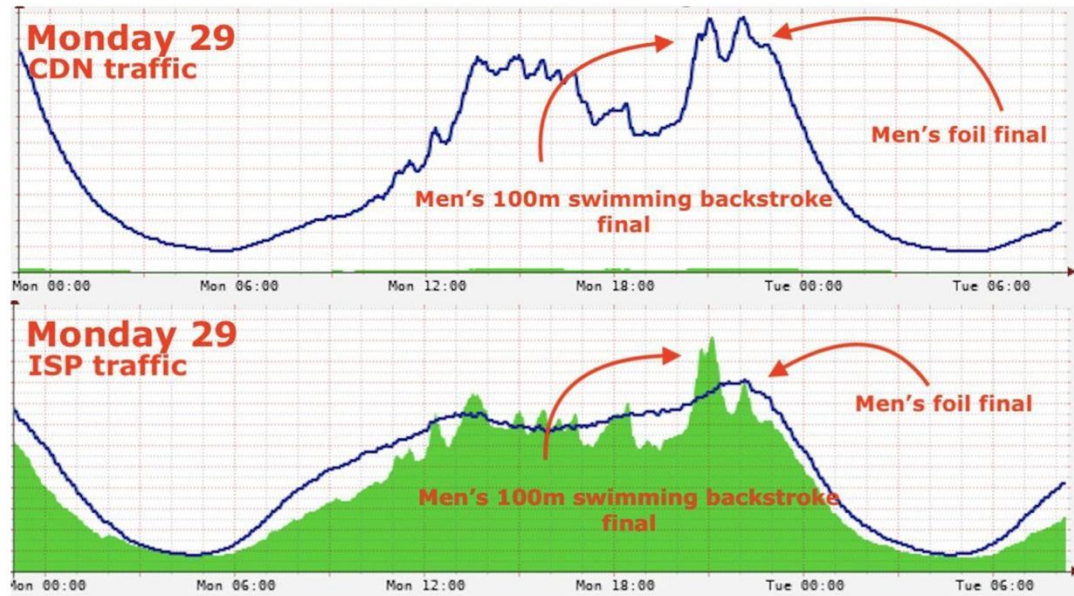
Content Distribution



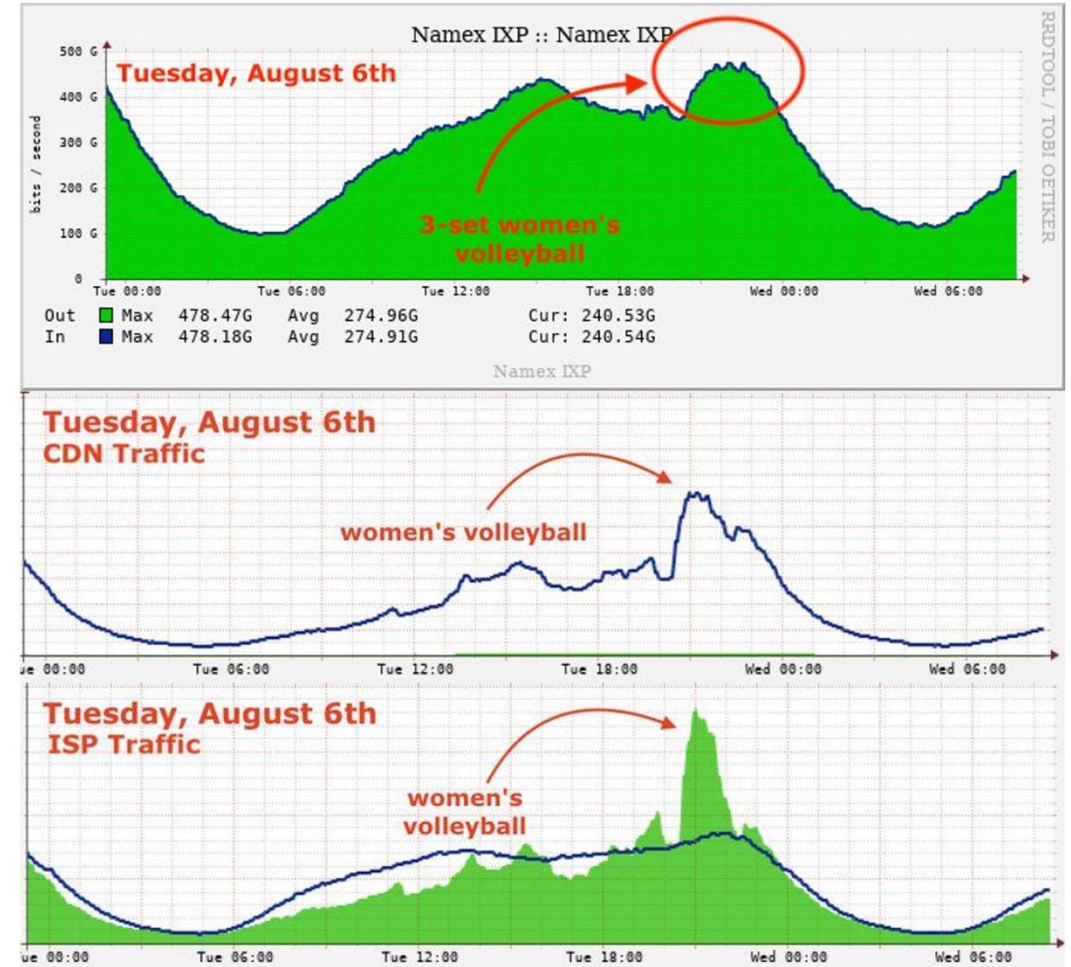
Content Distribution



Content Distribution

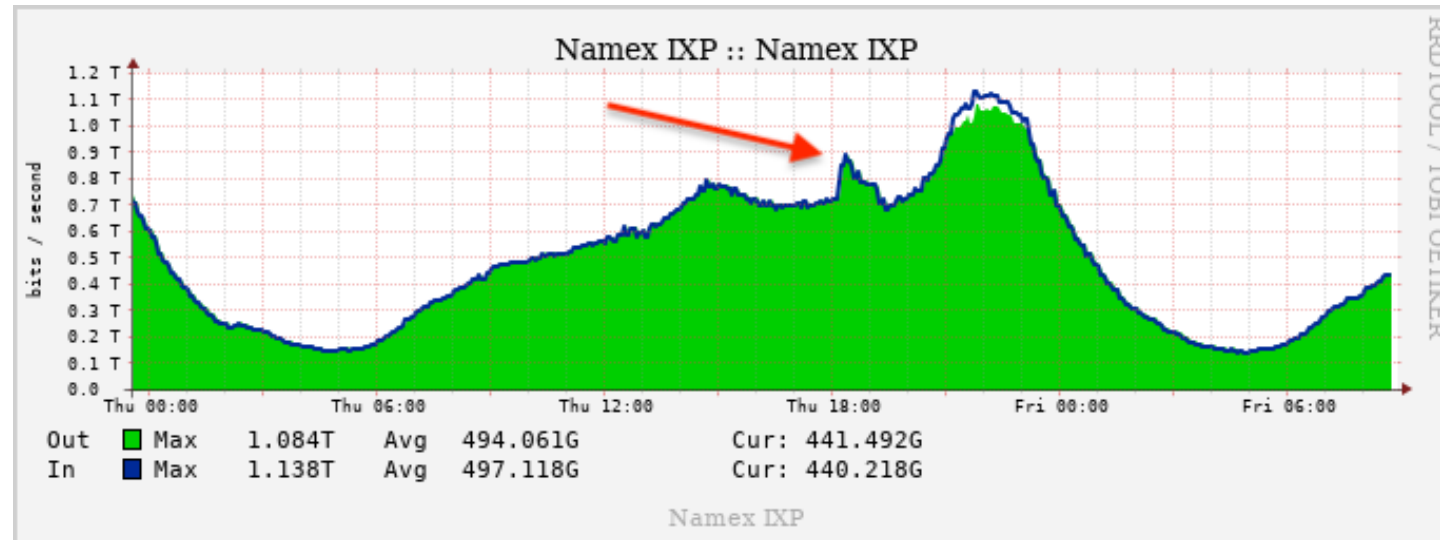


Back to the star of these Internet Olympics, here is volleyball. Italy against Poland on the 3rd of August. The 4 peaks you see in the red circle refer to the 4 sets played.



<https://blog.lacnic.net/en/olymppeaks-the-impact-of-paris-2024-olympics-on-italys-internet-traffic/>

Content Distribution



Shortly after 6pm, the world witnessed the fumata bianca, the white smoke signaling the election of a new Pope.

Thanks!
QUESTIONS?

Flavio Luciani
f.luciani@namex.it

