INTERCONNECTION IN ALBANIA

The Albanian Neutral IXP

Daniele Arena – NaMeX

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Where does local Albanian traffic go?

Where does local Albanian traffic go?

- Tirana to Tirana
- Traceroute:
  - London
  - Amsterdam
  - Hamburg
  - Prague
  - Bratislava
  - Budapest
  - Belgrade
  - Podgorica
- RTT: 74.0 ms

(Made with RIPE Atlas)

Where does local Albanian traffic go?

- Tirana to Tirana
- Traceroute:
  - Milan
  - Geneva
  - Paris
  - London
  - Copenhagen
  - Stockholm
  - Frankfurt
  - Back to Milan
- RTT: 137.4 ms
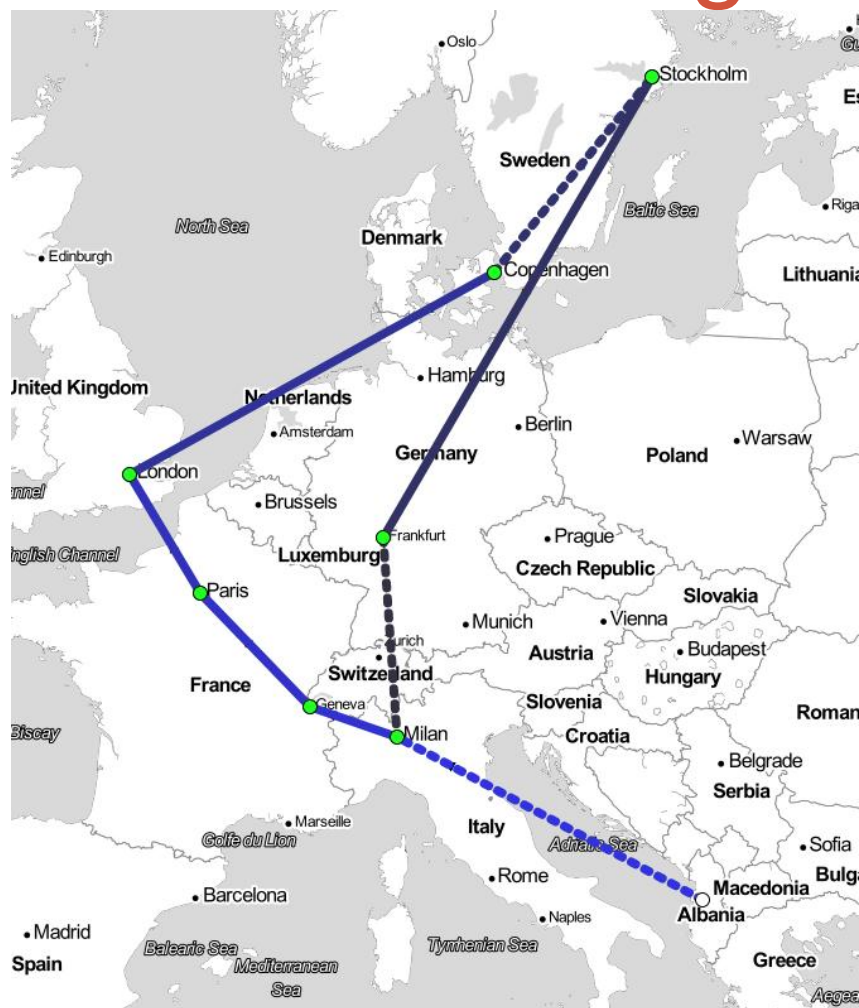
(Made with RIPE Atlas)

Where does local Albanian traffic go?

- Prishtina to Tirana
- Traceroute:
  - Ljubljana
  - Sofia
  - Catania
- RTT: 54.1 ms

(Made with RIPE Atlas)

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Where does local Albanian traffic go?

A map of traceroutes between Atlas probes in Albania (courtesy ixp-country-jedi)
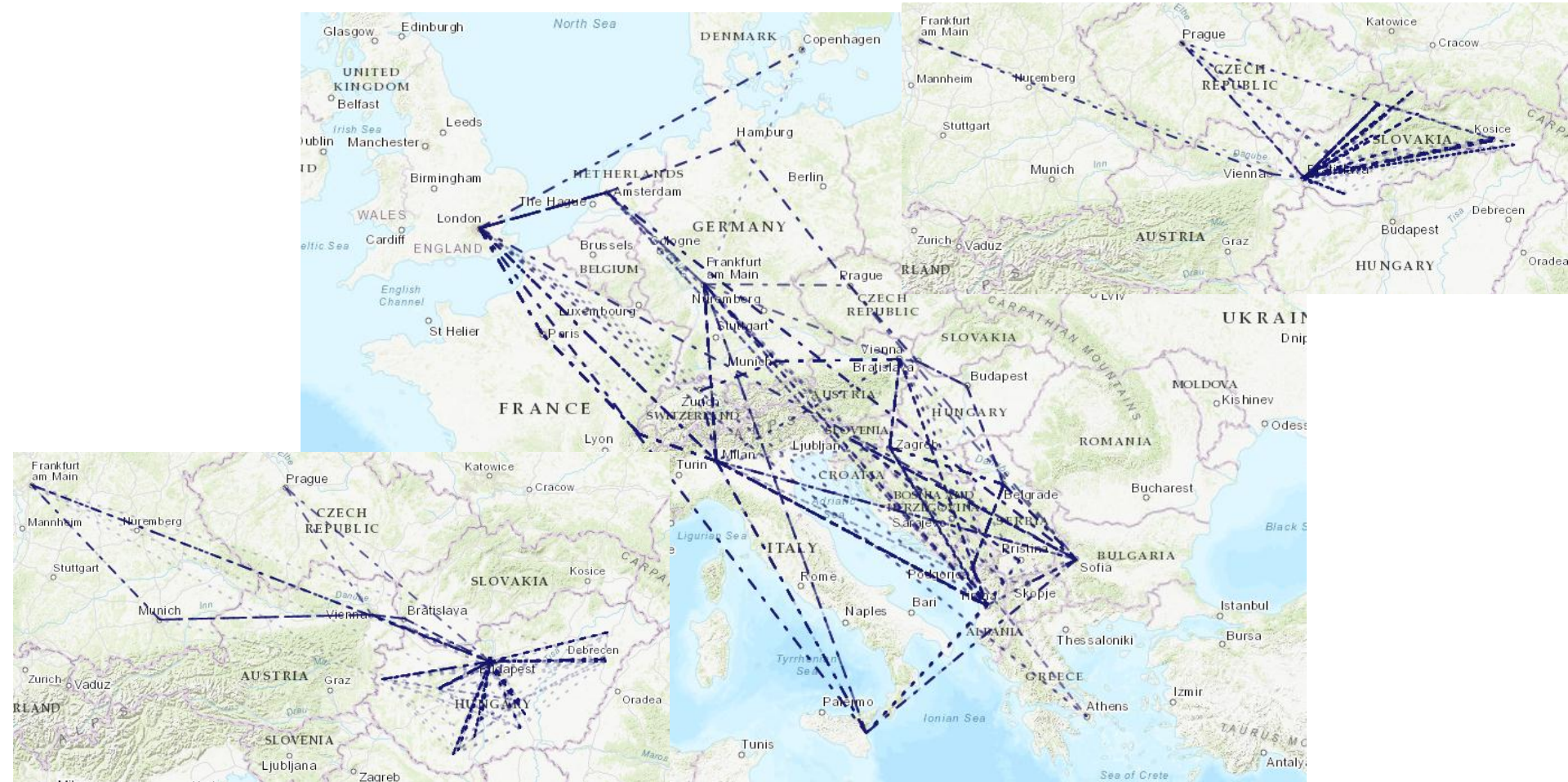
Albanian ISP/Internet Situation

- Albania is an ISP-rich environment: 53 ASNs
  - Comparison: 38 MK, 15 ME, 143 GR, 152 RS
  - 782 IPv4 Routes
  - 40 IPv6 Routes
- 42 ASNs with basic interconnection
  - i.e. 3 IPv4 "adjacencies" (i.e. peerings + transits) or less
  - 79% of total
  - Only 6 with 7+ adjacencies (i.e. "active" peering)
- Content
  - About 17,500 .al domains registered

(Sources: HE, DomainTools)

Top Websites for Albania: Alexa Top-50

- How many of those are hosted in Albania?

Hungary 22		Turkey 20
Bulgaria 18	**0**	Slovenia 17
Croatia 14		Serbia 13
Macedonia 11		Greece 6
Montenegro 2		Bosnia 2

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Top Websites for Albania: Alexa Top-50

- Where are they hosted?

Foreign Hoster 28%

CDN 72%

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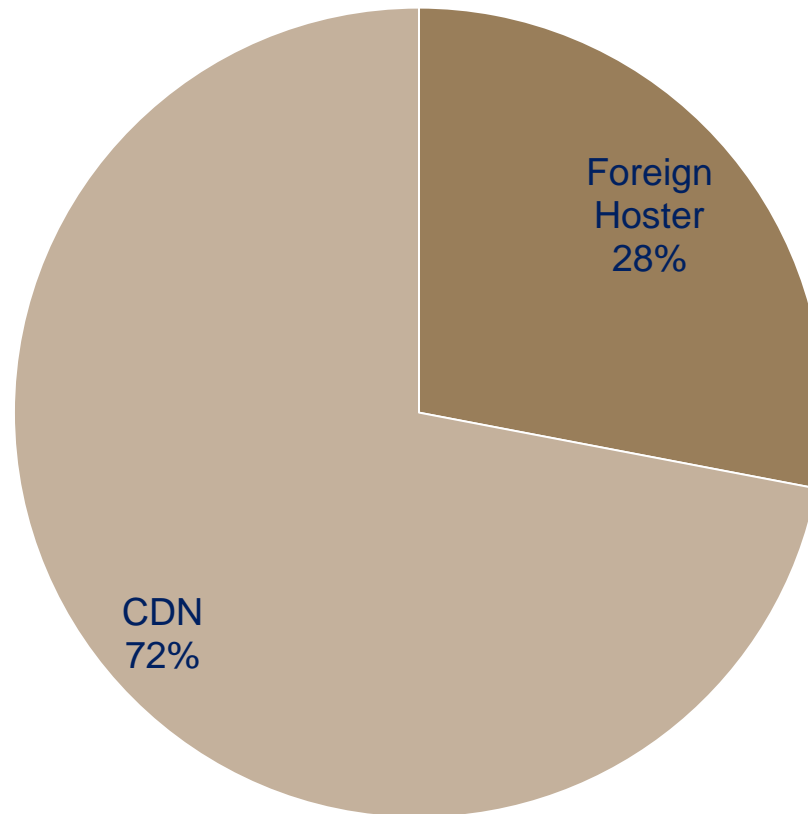
Websites for Albanian ISPs

- Where is your own website hosted?

Pie chart: Albania 43%, Other 24%, Netherlands 12%, USA 12%, Kosovo 9%

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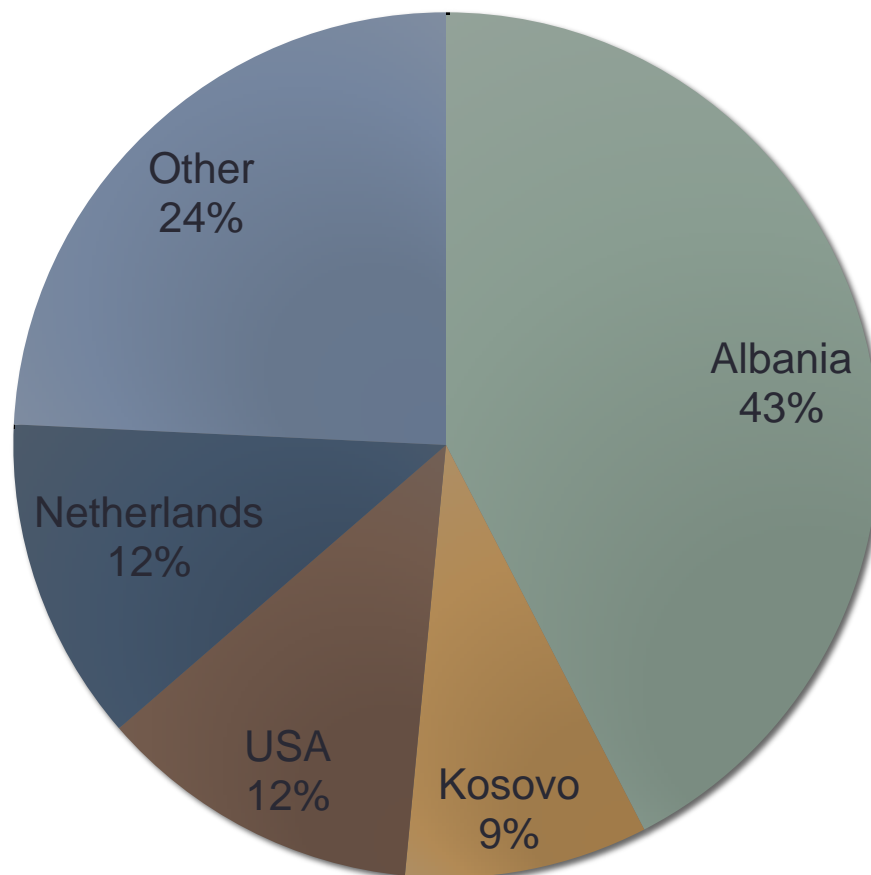
Even when the content is local…

• AKSHI
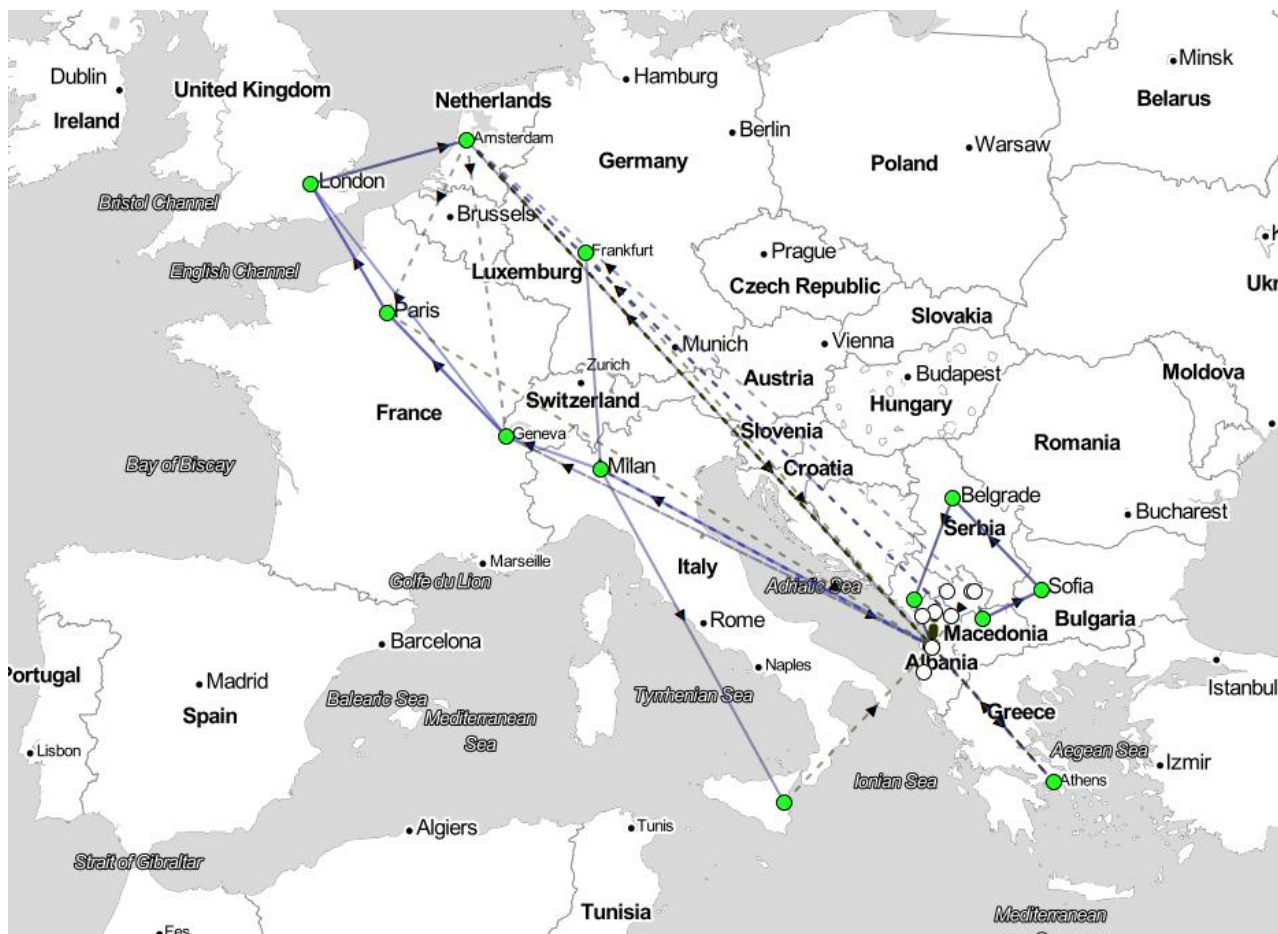
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Why is Albanian content hosted abroad?

Poor local interconnection → Packets have to go abroad and come back → Why not just host content abroad?

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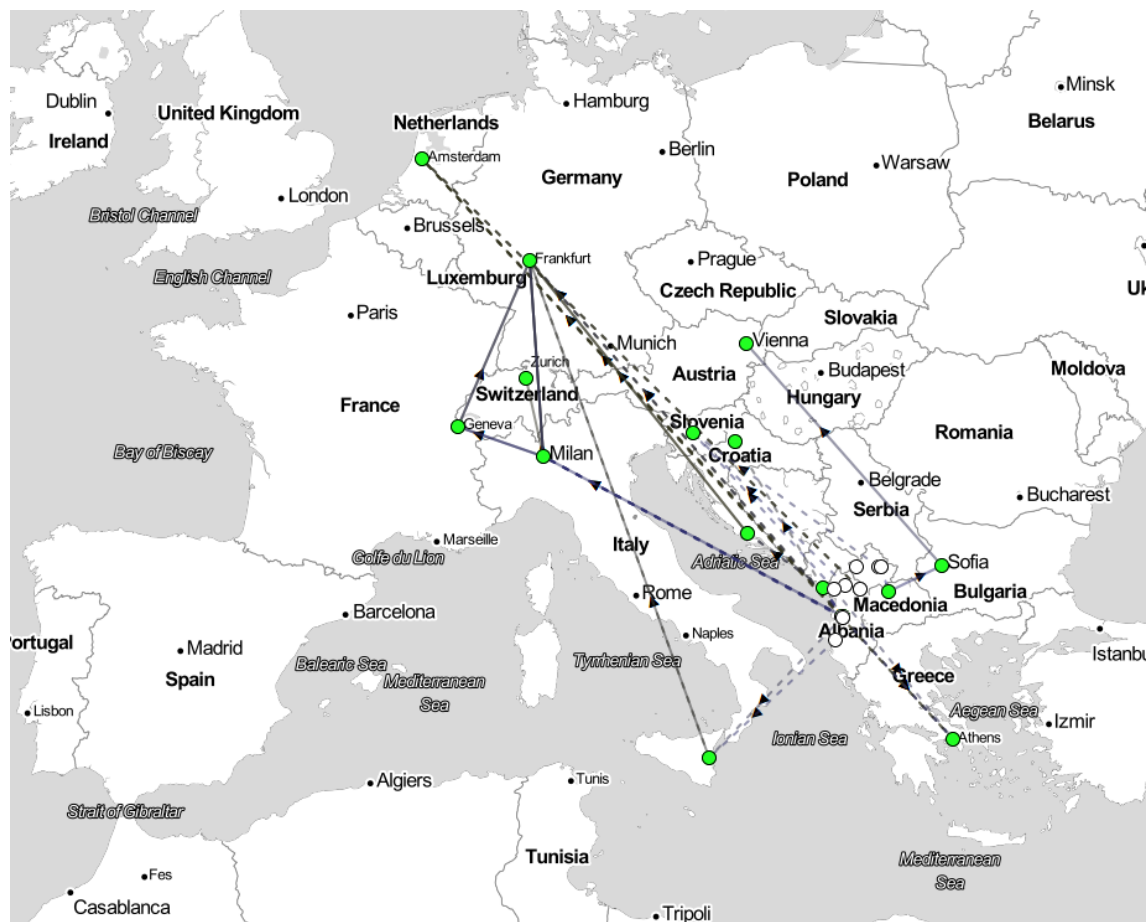ROMA Internet eXchange Point

How do we get foreign content?

- OVH
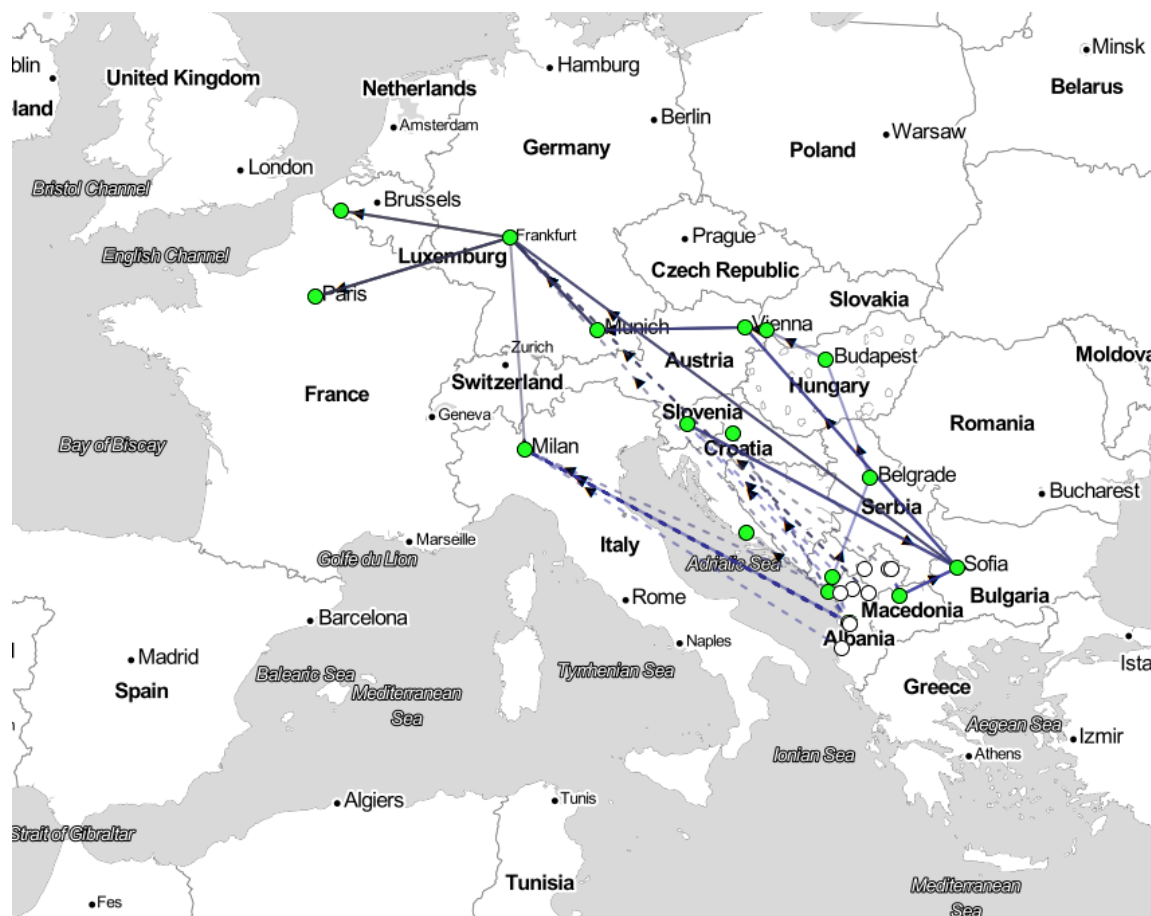
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How do we get foreign content?

- Cloudflare
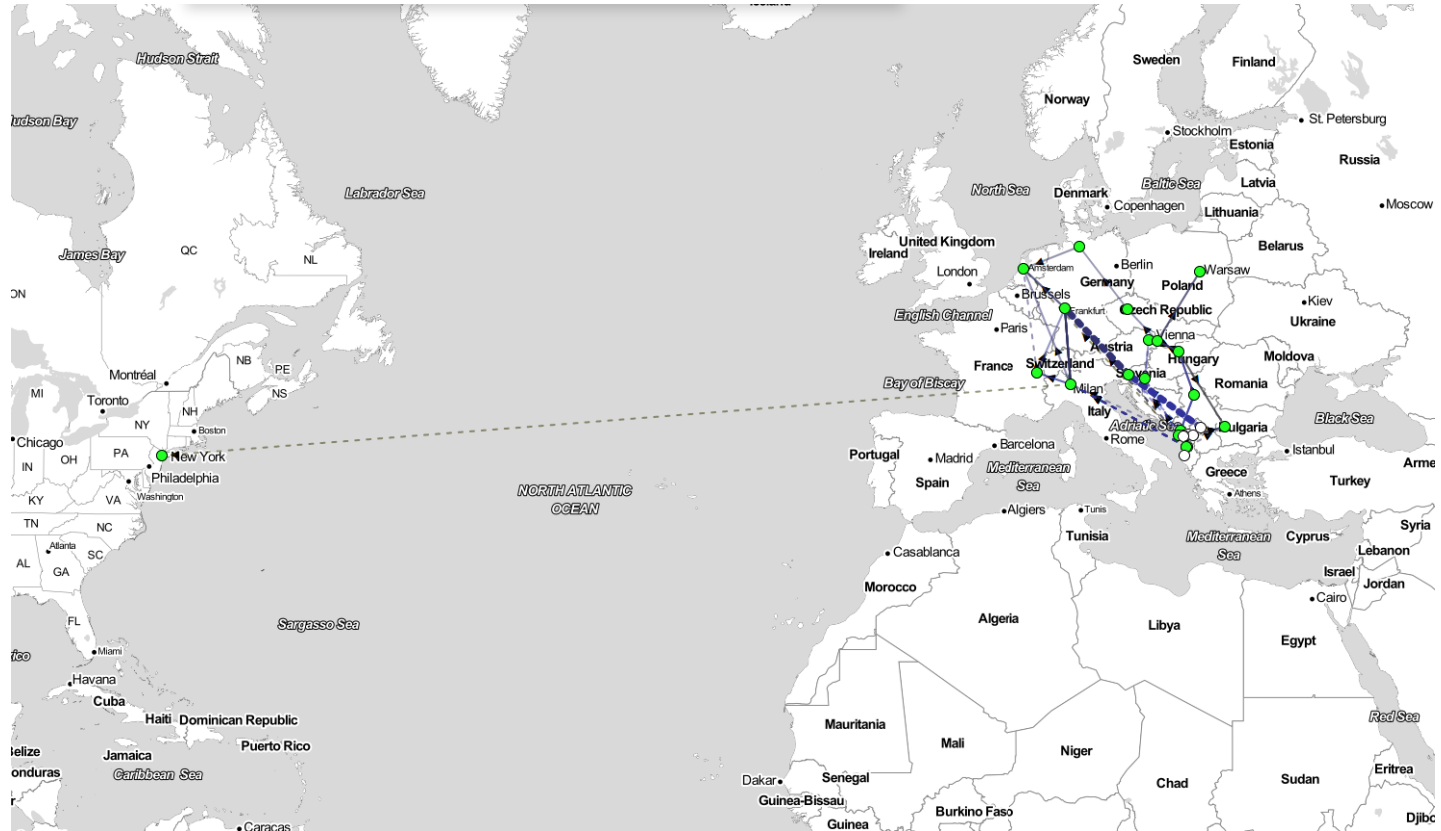
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How do we get foreign content?

- Facebook

When the content flies away…
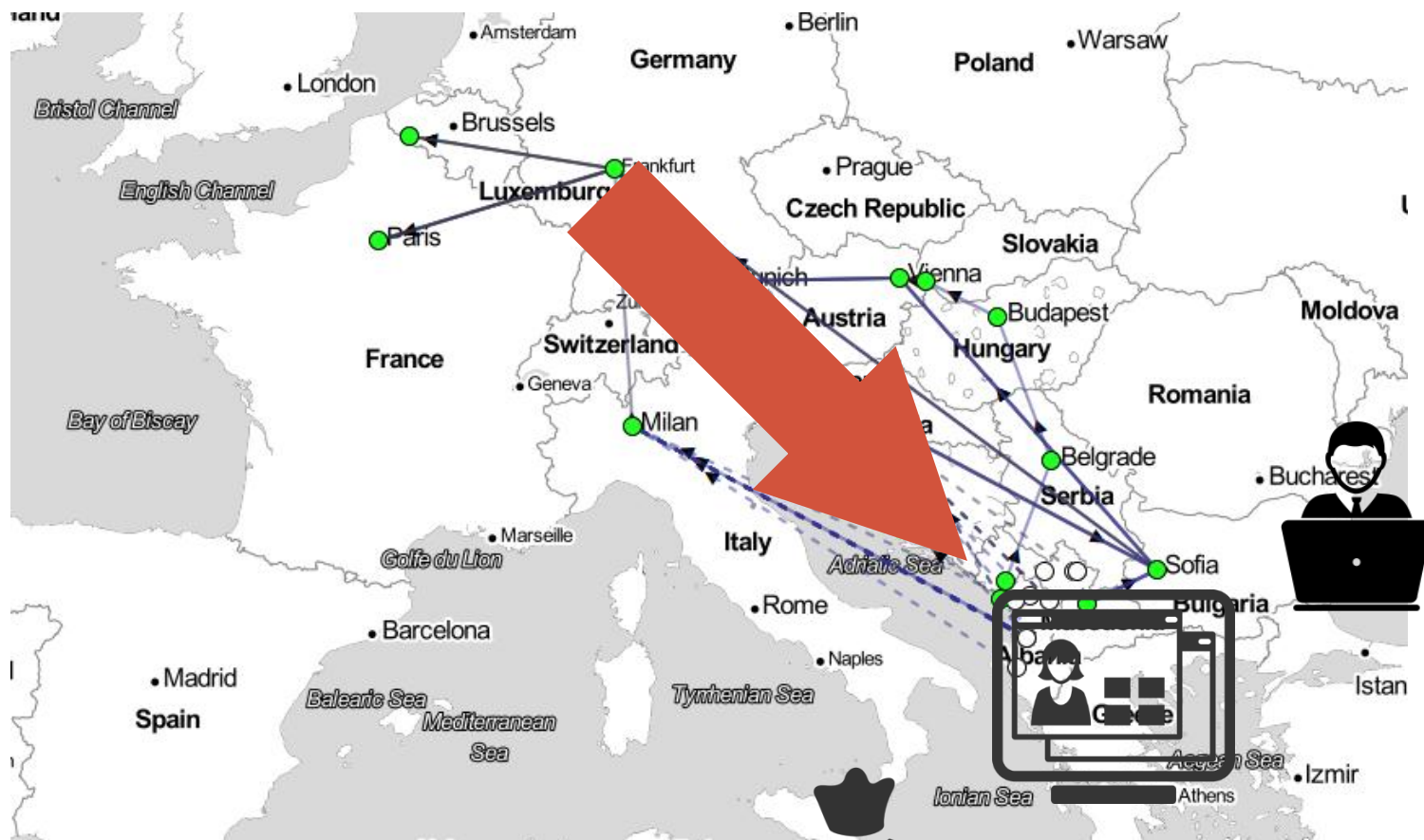
Get the business back!

The vicious circle of "no-peering"

Poor interconnection environment

Easier to reach servers abroad

Focus on transit, not peering

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First ALNOF Meeting, 14 November 2017, Tirana

The virtuous circle of peering

Healthy interconnection environment

Keep local traffic local

Development of local infrastructure

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First ALNOF Meeting, 14 November 2017, Tirana
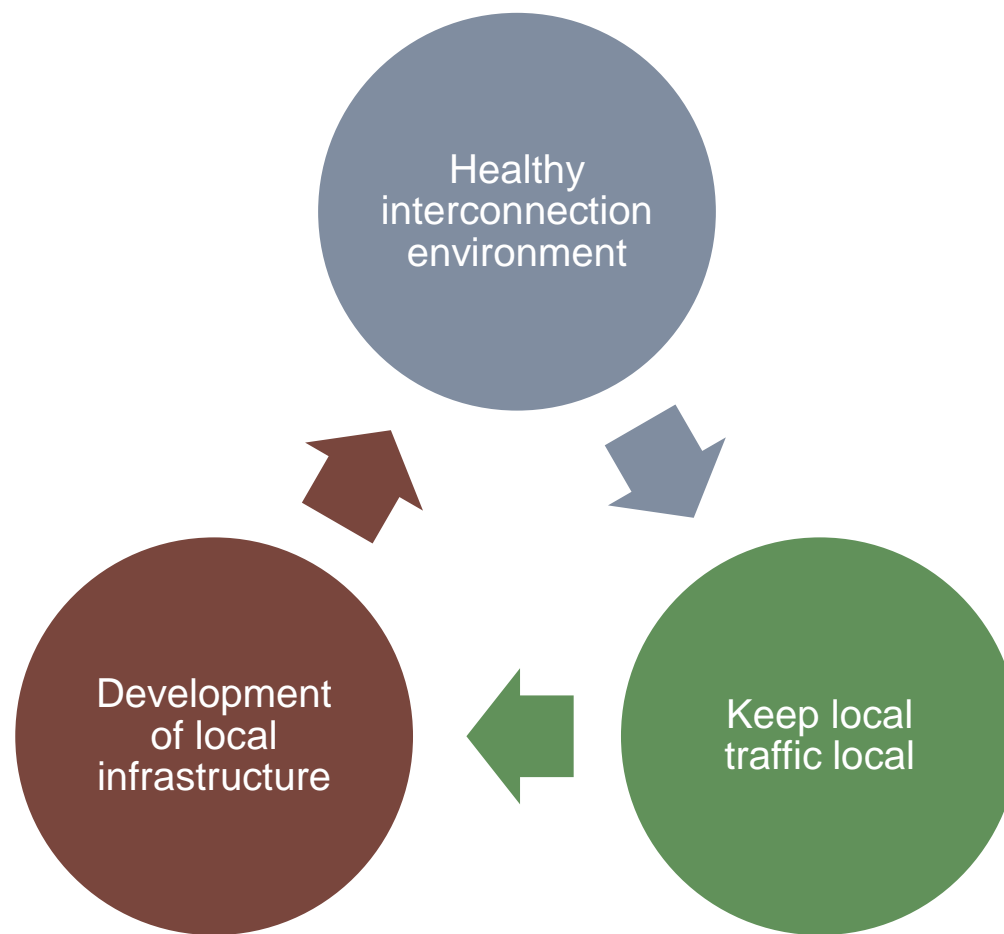
How to interconnect in Albania?

- Private interconnects
  - They exist among larger ISPs
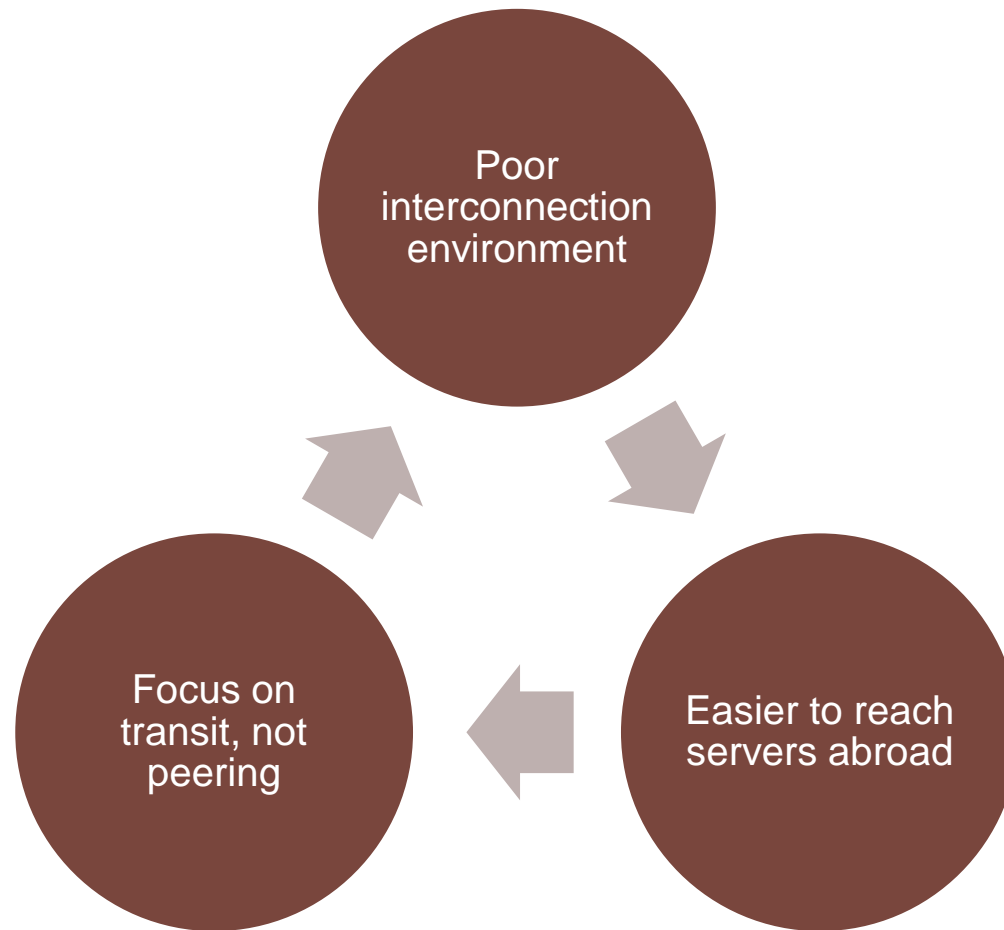 - Not too efficient / scalable
  - Every single interconnection can be expensive
  - One party has to agree to reach the other party in its premises
- One existing "IXP": ALB-IX
  - A *service* of ALBtelecom
  - 8 customers
  - Main drawback: lack of trust of ISPs in the incumbent
    - Competitor, non-neutral

# A new, neutral IXP in Albania: ANIX

- We are building a neutral IXP in Tirana
  - Management: RASH supported by NaMeX
    - Guaranteed neutrality & experience
    - "Member-based": Involvement of ISPs in main decisions
  - An opportunity to efficiently set up interconnections
    - Peer with each other's networks in a centralized (and central) location
    - A neutral colocation where foreign CDNs and OTTs can be hosted
  - Equipment: donated by NaMeX
  - Location: RASH Data Center

Data Center: Location

- Rruga e Durrësit, next to school «Qemal Stafa»


Tirana International
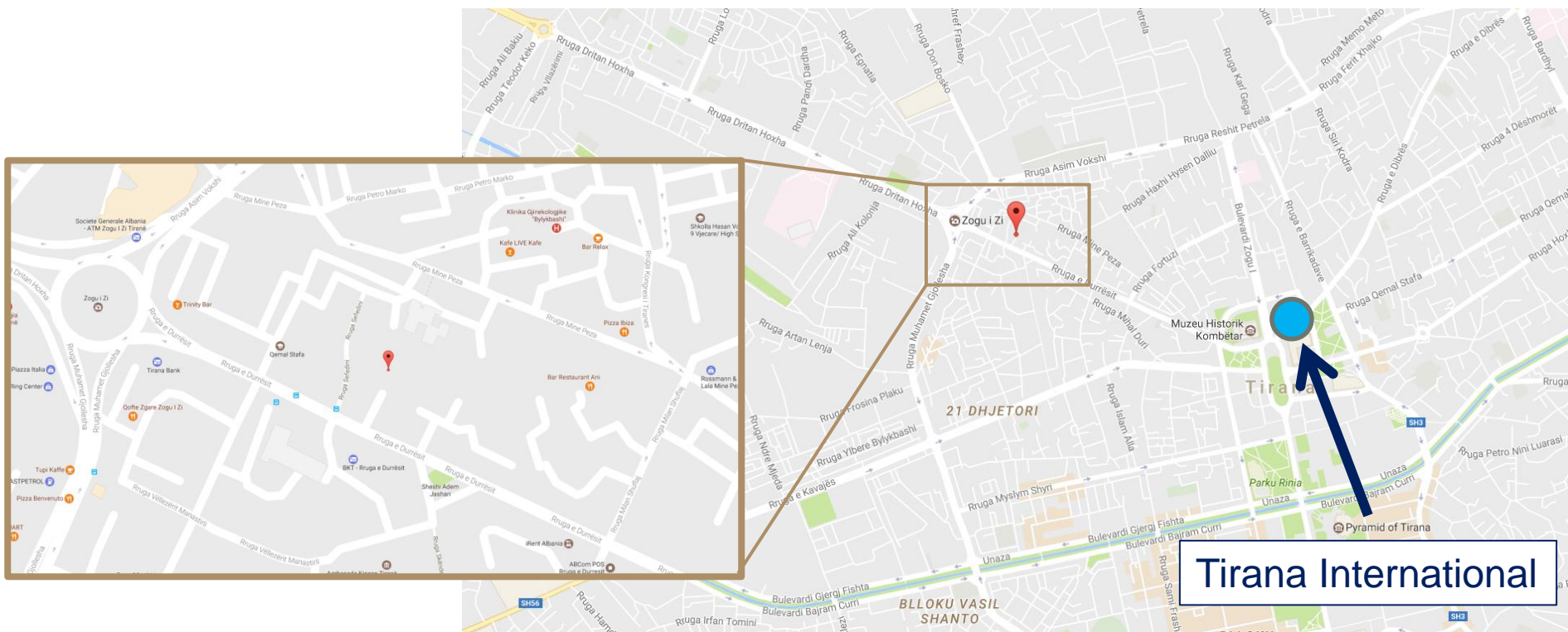
Data Center Features

- Two separate rooms already structured
  - Server / IXP room
  - Carrier / meet-me room
- N+1 UPS
- Generator
- On-site network engineers
- ATU fiber delivered on-site
- Possibility of other fiber access
  - Location close to main metropolitan fiber networks
  - Possibility of separate fiber access from rear street (Mine Peza)

IXP Infrastructure

- AS number (AS205140) and PI space (185.1.100.0/24) allocated by RIPE NCC

- Core switch: Cisco 6503-E
  - 48 ports 10/100/1000 RJ45
  - 8 ports 1G single-mode
  - 2 ports 10G
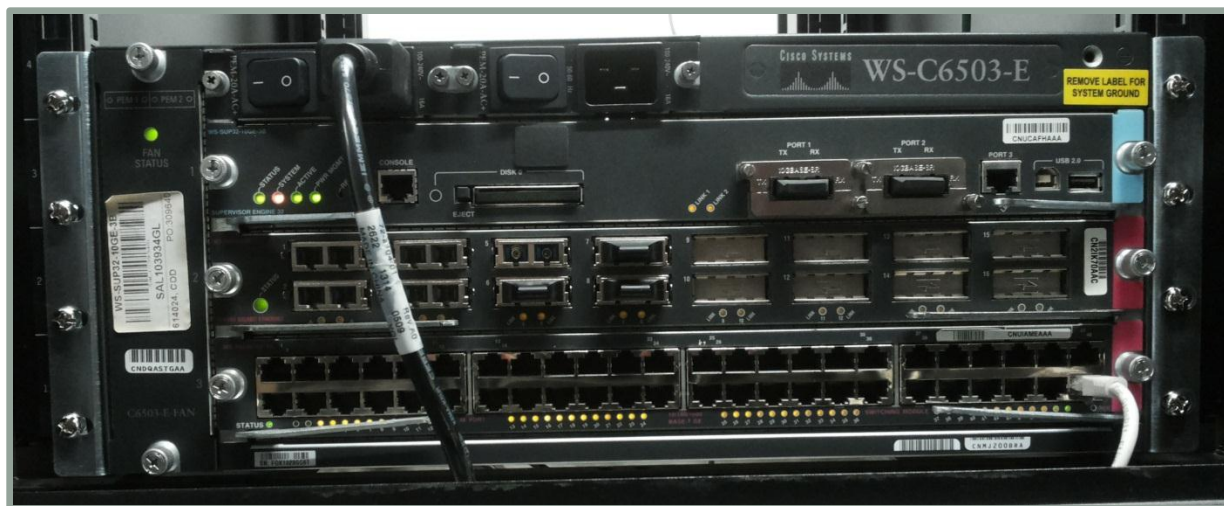
How to join

- Have AS Number and IP addresses obtained from RIR (e.g. RIPE NCC)
- Follow ANIX Technical Regulations
- Bring router or point-to-point connection to RASH data center
- **Free until June 2018!**
- Afterwards, the IXP should be sustained by members' fees
  - The final fees will be agreed with members

Our goals

- Keep local traffic local
  - Stop long traces and high RTTs!
  - Promote locally hosted content
- Be a catalyst for the development of an ISP community in Albania
  - Neutral IXP
  - Network Operators Group
- The core switch is up & running, we are waiting for you to connect!
- Send an e-mail to d.arena@namex.it

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Q&A

Daniele Arena – d.arena@namex.it