Introduction to RONOG 5

ROmanian Network Operators Group

Eric Andrei Băleanu

InterLAN

'RONOG is a platform for people to share ideas in an informal way, focusing on technical aspects which can affect the Internet'

RONOG 1
29 October 2014

- Followed the 25th Euro-IX Forum and a great Karaoke night!
- 141 Attendees
- 19 Countries
- 25 Speakers

- Topics: Policy & Governance, IXP's, Network Operators, CDN's, Equipment Vendors, Security

Euro-IX: Association of IXPs

- The European Internet Exchange Association (Euro-IX) gathers 80 IXPs from around the world.

- Promoting an open interchange of ideas and experiences by offering fora, mailing lists an online resources.

- Romania currently has 1 member: InterLAN Internet Exchange (since 2008).

- The 25th Euro-IX Forum was held in Bucharest, Romania, on 26-28 October 2014 and hosted by InterLAN Internet Exchange.
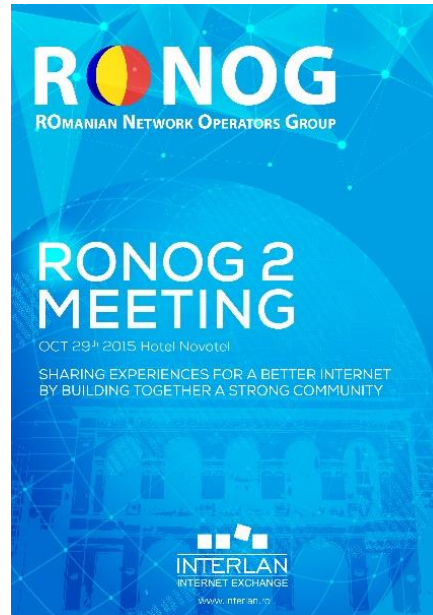
RONOG 2
29 October 2015

- 147 Attendees
- 11 Countries
- 19 Speakers

- Topics: Policy & Governance, IXP's, Security, Network Operators, Equipment Vendors

RONOG 3
12 October 2016

- Clubbed with ION Meeting Bucharest

- Followed by 2 RIPE Training Days

- 149 Attendees

- 13 Countries

- 12 Speakers

- Topics: Policy & Governance, IXP's, Security, IPv6, DNSSEC

RIPE NCC

- An independent, not-for-profit membership organisation that supports the infrastructure of the Internet through technical coordination in its service region.

- The Regional Internet Registry (RIR) providing global Internet resources and related services (IPv4, IPv6, AS Number resources).

- Members in Europe, Middle East and Central Asia.

- RIPE 71 Meeting was held in Bucharest, Romania, on 16-20 November 2015 and was hosted by InterLAN Internet Exchange.

RIPE SEE Meetings

- RIPE SEE Meetings are Regional Meetings in South East Europe

- RIPE NCC Regional Meetings bring together RIPE NCC members, local governments, key players in the global and local Internet industry and RIPE NCC staff.

- Regional Meetings help the RIPE NCC learn about the technical, administration and policy issues that affect members and industry organisations in a geographical region.

- RIPE SEE 7 was held in Timisoara, Romania, on 18-19 June 2018 and hosted by InterLAN Internet Exchange.
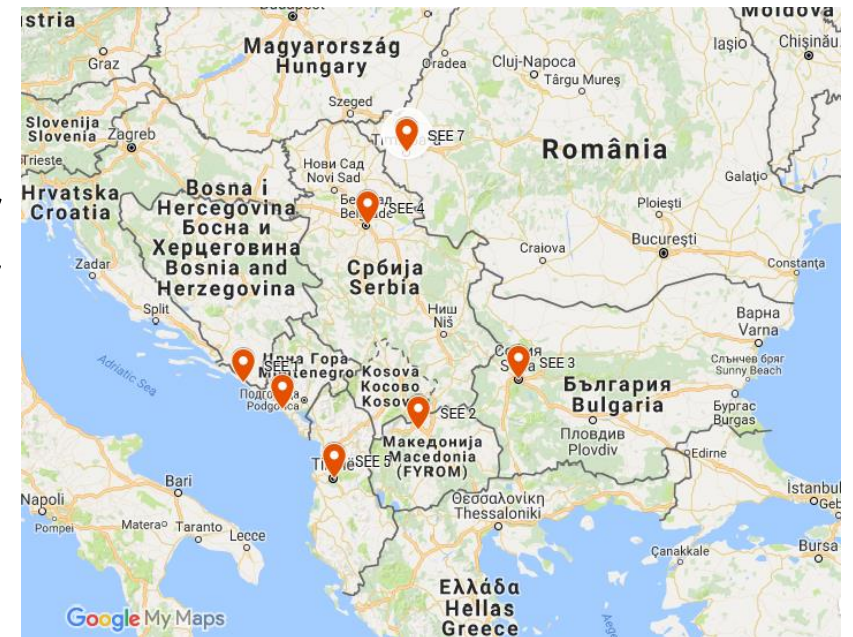
Internet Society

- The Internet Society is a global cause-driven organization governed by a diverse Board of Trustees that is dedicated to ensuring that the Internet stays open, transparent and defined by you.

- The Internet Society was founded in 1992 by a number of people involved with the Internet Engineering Task Force (IETF).

- InternetON (ION) Conferences are organized by Internet Society and bring network engineers and leading industry experts together to discuss emerging technologies including IPv6 and DNSSEC.

- ION Bucharest was clubbed with RONOG 3 on 12 October 2016 and hosted by InterLAN Internet Exchange.

RONOG 4
12 October 2017

- Followed by 3 RIPE Training Days and RIPE Member Lunch

- 220 Attendees

- 17 Countries

- 21 Speakers

- Topics: Policy & Governance, Infrastructure / Network Operators, Security, IoT / IPv6

Our special Thanks go to:

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Internet Society

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RIPE NCC

Kevin Meynell
Internet Society

Martin Levy
Cloudflare

Harald Michl
Vienna Internet Exchange

Serge Radovcic
RIPE NCC

Bijal Sanghani
Euro-IX

Aleksi Suhonen
Tampere Internet Exchange

Jan Zorz
Internet Society

RONOG on the web

- RONOG official site:
  www.ronog.ro

- RONOG on Facebook
  facebook.com/romaniannetworkoperatorsgroup/

- RONOG discussion group on Facebook
  facebook.com/groups/ronog/

- RONOG discussion group on Linkedin
  linkedin.com/groups/3409691

- RONOG on Twitter:
  twitter.com/RONOG_Romania

- RONOG channel on Youtube:
  https://www.youtube.com/c/RonogRo

InterLAN history

- Interlan Association was founded in 2005 in Bucharest by 6 local ISPs

- Member of Euro-IX since 2008

- InterLAN Internet Exchange SRL was established as a project company in 2010

- Member of RIPE NCC and LIR since 2015
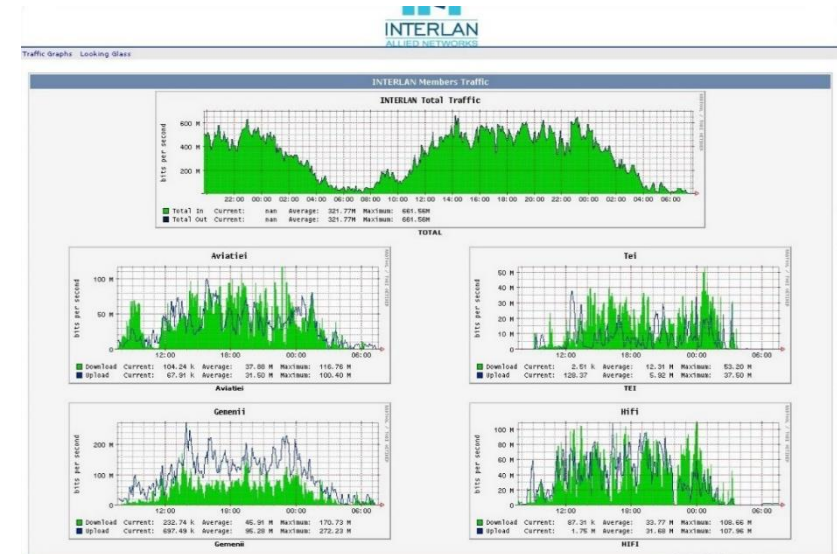
Numbers and Facts

- Interlan Association has now 37 members across the country.

- Romanian ISP's only may become members in the Association. They pay a monthly membership fee and may have free access to the IXP Platform on their request.

- The Association will represent the interests of its members in front of the local and central authorities.

- Any Network Operator who has a AS Number may connect to the IXP Platform as partner. Parters must conclude a contract with the limited company.

- The IXP Platform: 14 POP's, 9 cities, 150 Gbps daily preak traffic, 700 Gbps connected capacity, over 90 ASN's, 30 multicast sources, 6 DNS Root Servers.

Member Workshops

Interlan Association is organising workshops for its members. The goals of these workshops are to promote the cooperation between members and to provide a framework for sharing experiences and knowledge.

- Workshop #1: 25 November 2017,
  Sâmbăta de Sus, Brașov county

- Workshop #2: 5 May 2018,
  Mamaia, Constanța county

InterLAN Internet Exchange

- Over 100 ASNs from Romania and worldwide connected

- 14 locations: 7 in Bucharest, 7 in major cities representing historical regions of Romania and 1 in the heart of Europe, Frankfurt, Germany

- Connected providers: XX from Romania, XX from the neighbouring countries, XX from the rest of Europe, XX from US and XX from Asia

- 6 DNS Root anycast instances: D, E, F, J, K, L

- AS112 service

- RIPE NCC RIS Remote Route Collector

- IXP Manager peering tool

National & regional infrastructure

135 ports in 15 POP's:

In Bucharest:

- Bucharest NXDATA-1
- Bucharest NXDATA-2
- Bucharest Ines
- Bucharest Massive Telecom
- Bucharest M247
- Bucharest Teletrans
- Bucharest Pronet Soluții IT

Regional & International:

- Timișoara ARNIEC
- Arad CobraNet
- Constanța Teletrans
- Craiova Tier
- Cluj-Napoca CIA
- Iași Top Telecom
- Suceava Teletrans
- Frankfurt Equinix FR5
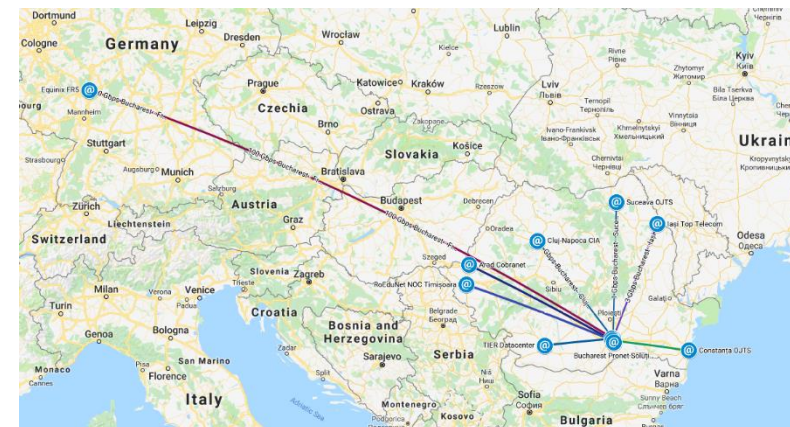
Linking historical regions of Romania

- Banat (Timișoara)

- Bucovina (Suceava)

- Crișana (Arad)

- Dobrogea (Constanța)

- Moldova (Iași)

- Muntenia (Bucharest)

- Oltenia (Craiova)

- Transilvania (Cluj-Napoca)
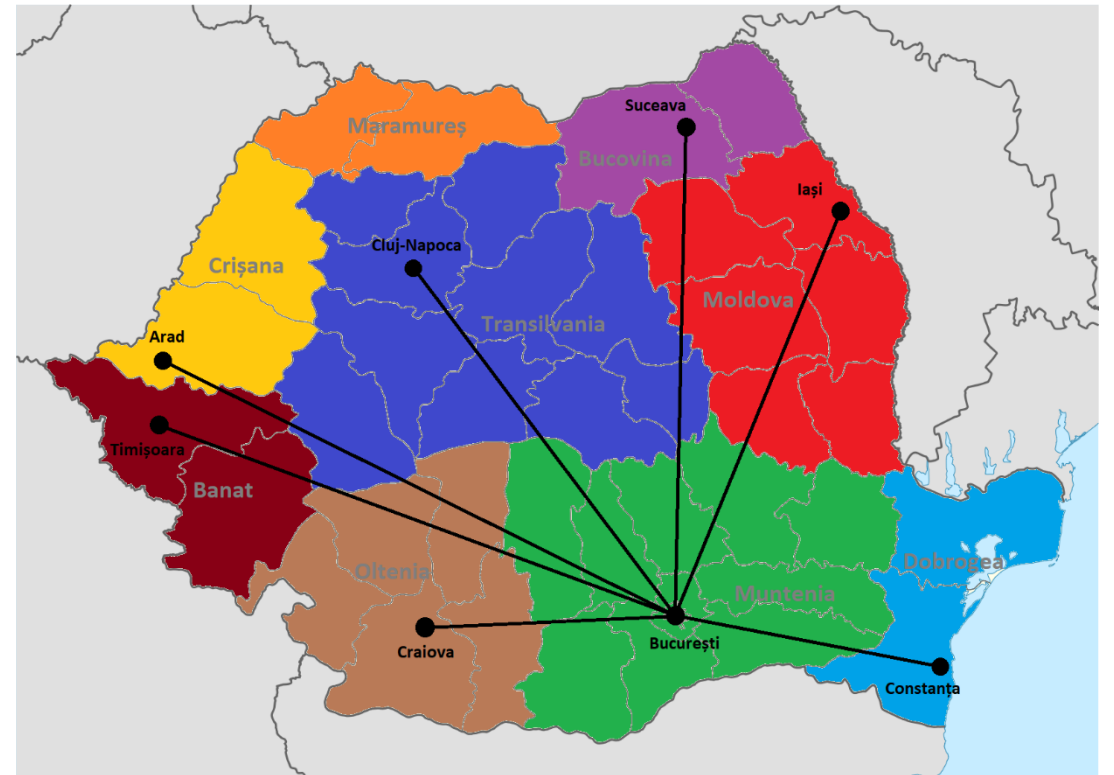
Peak traffic & connected capacity

Ports:

- 100M x 8 ports

- 1G x 53 ports

- 10G x 74 ports

Total connected capacity: 793,8G

New ports available from 2018:

- 40G

- 100G
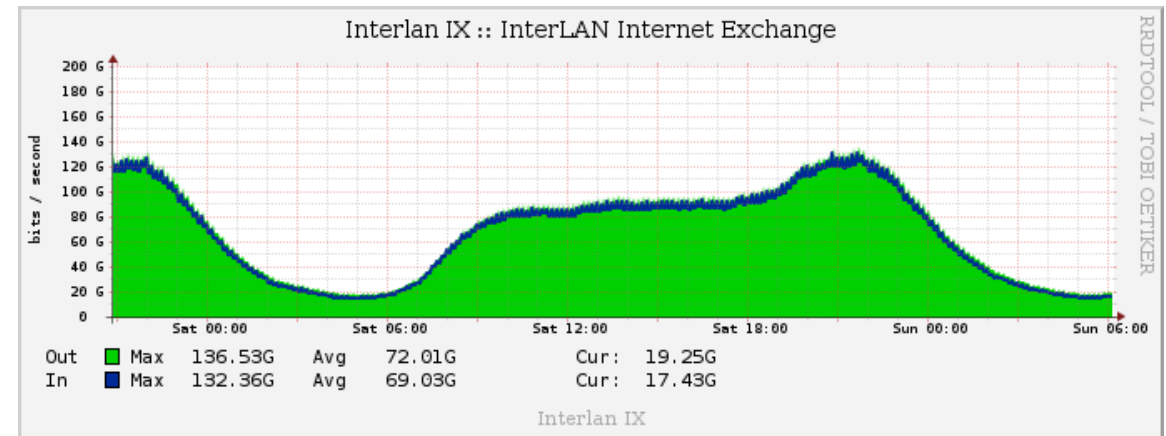
95% are using InterLAN route-servers
75% are using IPv6

DNS Root Servers

The global root server system consists of 908 instances operated by the 12 independent root server operators.

All 9 DNS Root Anycast Servers in Romania are hosted in Bucharest.

6 out of 9 DNS Root Anycast Servers in Bucharest are hosted by InterLAN:

- D-Root (University of Maryland)
- E-Root (NASA Ames Research Center)
- F-Root (Internet Systems Consortium)
- J-Root (Verisign)
- K-Root (RIPE NCC)
- L-Root (ICANN)
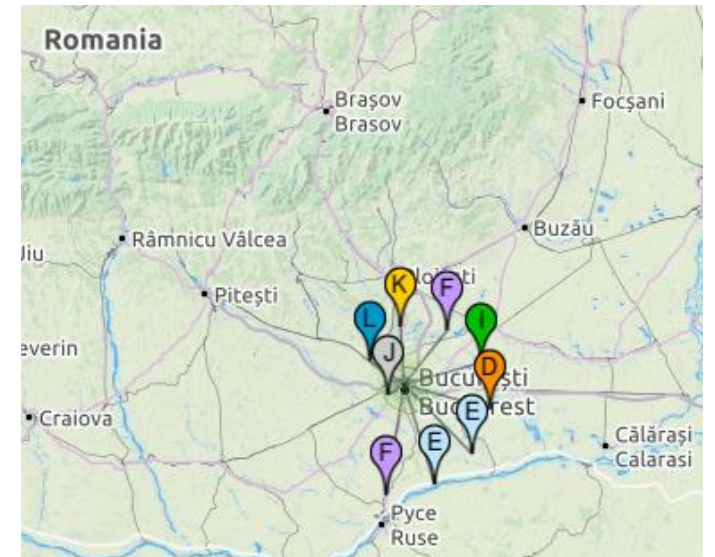
TV Exchange Media Platform

- 35 streams
- 24 channels
- Multicast MPTS/SPTS and unicast
- Stream management app (currently in development)

IXP Manager

IXP Manager is a full stack management system for Internet eXchange Points (IXPs) which includes an administration and customer portal; provides end to end provisioning; and both teaches and implements best practice.
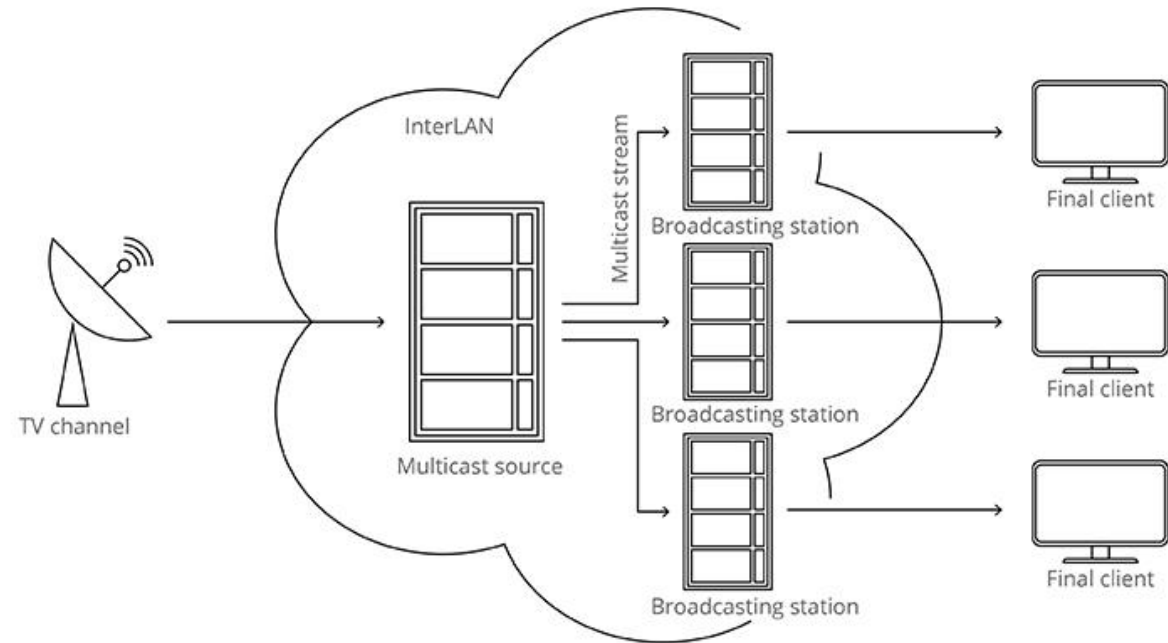
Powering 54 IXPs   GitHub   @ixpmanager

Management system for Internet Exchanges

- Home: Information about your connection

- Member information: Who else is connected?

- Peering: Manage your peering connections

- Documentation: Docs and configuration examples

- Statistics: Your traffic graphs, member graphs, POP graphs

- Support: Contact information

- My Account: Your personal details

PeeringDB Information

https://www.peeringdb.com/ix/270   https://www.peeringdb.com/net/11965

Other Services

- Local Internet Registry (LIR): IPv4, IPv6 & AS Number administration

- Registrar services for .ro domains

- CAS server for members who provide TV programs to end-customers

- Cautnet.ro: a portal for alternative internet service providers

- Dark Fibres in Bucharest underground network (Netcity)

- Data carrier services for members in the country.

- Legal assistance for ISP's common issues

Events Hosted by InterLAN

- 25th Euro-IX Forum: 26 - 28 October 2014, Bucharest

- RONOG 1: 29 October 2014, Bucharest

- RONOG 2: 29 October 2015, Bucharest

- RIPE 71: 16 – 20 November 2015 Bucharest

- RONOG 3 & ION Meeting: 12 October 2016, Bucharest

- RONOG 4: 31 October 2017, Bucharest

- RIPE SEE 7: 18-19 June 2018, Timisoara

- RONOG 5: 23 October 2018, Bucharest

Membership and Sponsorship

- Full member of Euro-IX Association
- Full member of RIPE NCC and LIR in Romania
- Donor of Euro-IX Fellowship Programme
- Sponsor of IXP Manager Project

Find Us

- InterLAN Official Site:
  www.interlan.ro

- Interlan Association on Facebook
  facebook.com/interlanro

- InterLAN Internet Exchange on Facebook
  facebook.com/interlaniex

- InterLAN Internet Exchange on LinkedIn
  linkedin.com/company/interlaninternetexchange/

- InterLAN Internet Exchange LinkedIn Group
  linkedin.com/groups/3409691

A big **THANK YOU**
to all our members and partners!

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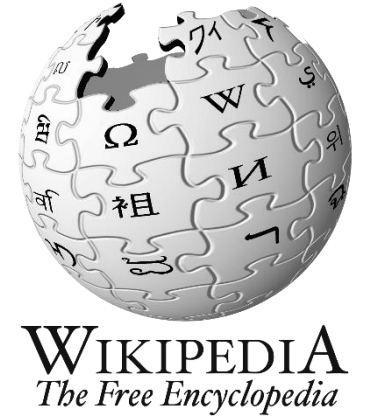
- RONOG: ro.wikipedia.org/wiki/RONOG

- Asociația Interlan: ro.wikipedia.org/wiki/Asociația_Interlan

- InterLAN-IX: ro.wikipedia.org/wiki/InterLAN_Internet_Exchange

- Euro-IX: ro.wikipedia.org/wiki/Euro-IX

- RIPE NCC: ro.wikipedia.org/wiki/RIPE_NCC

- RIPE SEE: ro.wikipedia.org/wiki/RIPE_SEE

- Internet Society: ro.wikipedia.org/wiki/Internet_Society

Questions?

Eric Andrei Băleanu
InterLAN

eric.baleanu@interlan.ro

facebook.com/ericandrei
twitter.com/ericandrei
linkedin.com/in/ericandrei/

President and founder of Interlan Association
Member of RONOG Programme Commitee
Member of RIPE SEE Programme Committee
RIPE Atlas Ambassador
RIPE Meetings Mentor