



euro-IX

Don't forget the
peers!

LINUX118, February
2023
Bijal Sanghani



ARISTA



interxion™

NOKIA



smartoptics

Membership Association of IXPs



Events

- Two Membership events per year hosted by our Members
- Workshops & hackathons
- Online/ virtual workshops



Services

- Reports
- Newsletters
- Mailing list
- Keeping the community connected – Virtual events



Tools & Community Projects

- Internet eXchange Point Database – IXPDB
- Peering Toolbox
- Fellowship & Mentor-IX
- Route Server Large BGP Communities list
- A new IXP Film



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IXP{DB}



A trusted source of information about
IXPS!

IXP{DB}

The IX-F JSON Schema

- A community driven schema that allows IXPs to report their data in a standard automated fashion
- It includes data sets on:
 - The IXP participants
 - IXP locations
 - Hardware used at IXPs and it's participants
 - Route Servers
- You can find the schema and documentation here - <https://github.com/euro-ix/json-schemas>
- IXPs can also add their IX-F export APIs to PeeringDB - <https://docs.peeringdb.com/ix-f-json-import-rules/>

Home Page Stats - Live Data

	LINX LON1 (LINX LON1)	LINX Manchester (LINX Manchester)	
	—	—	
Number of locations	10	5	5
Common ASNs		#108 Airband Community Internet Ltd Akamai Technologies Inc. Amazon Amito Ltd ANEXIA Internetdienstleistungs GmbH	
Monitoring tools	Icinga2	Icinga2	
Unique ASNs	#714 01 Telecom Ltd 100 Percent IT which monitors reachability.	#17 34SP.com Ltd AVR Group Limited which monitors reachability.	!
Topology	https://www.linx.net/about/network/	https://www.linx.net/about/network/	
ASNs	147185	INFYNIX DATA SERVICES	EIX Delhi (Extreme Internet Exchange India) 2023-02-24 0:00:00 UTC 0
	134993	iLemonrain Network	LocIX (LOCIX Internet Exchange Frankfurt) 2023-02-23 0:00:00 UTC 2

The Future



Available now

- Collect, organise & structure data
- Encourage IXPs to adopt to the schema – 284 today!



Coming soon

- Visualise the data via Maps and Charts
- Downloadable data sets in structured formats



Next Steps

- Finalise traffic API and build traffic trend datasets
- Data validation
- Identify useful 3rd party data

Other Information

- Mailing list for users - <https://lists.euro-ix.net/mailman/listinfo/ixpdb>
- GitHub JSON Member List Schema - <https://github.com/euro-ix/json-schemas>
- API - <https://api.ixpdb.net>
- Website - <https://ixpdb.euro-ix.net/en/>
- IXPDB admin team - ixpdb-admin@euro-ix.net



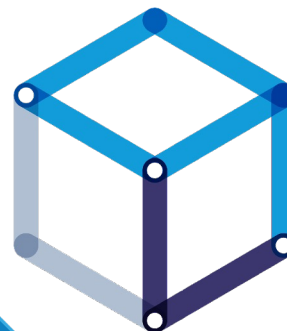
Contact secretariat@ix-f.net if you'd like to find out more or sponsor us!



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peering
:toolbox

peeringtoolbox.euro-ix.net

Peering Toolbox

Community Focused Learning Tool

Traditional Transit



20+ years ago

- ISPs provide Internet transit to organisations (content providers and end-users)
- Enterprise networks bought their Internet access from access and transit providers



What has happened?

- Internet has become an essential part of every organisation's services, so they are taking more control over it
- Businesses needed to optimise their services

What's the Problem?

- Growth in the importance of Internet to business operations is driving more enterprise networks to manage their own connection to the internet
- Managing this comes with risk
- Now there's more than one vendor relationship:
 - IXPs
 - Direct Peers

What's the Problem?

- Enterprises now take on roles previously the responsibility of their ISP:
 - Having the right resources: IP Addresses, ASNs
 - Managing their peers and related costs
 - How to peer and with whom?
 - Understanding the peering community
- There's A LOT to learn:
 - Where to start
 - Who to speak to
 - What are the best practices?
 - How to deal with network problems & outages?
- Solution?

What is the Peering Toolbox?



By the Community

- Community focused Euro-IX project
- Organisations involved include LINX, NAPAfrica, Microsoft, Amazon, INEX



Aims

- Provide a learning structure and best practice information for new entrants into the interconnection community



Aims

- The toolbox will act as a reference/guide that IXPs and networks can point others to for best practice information and learn how meet the IXP and peers' requirements

Peering Toolbox

- There's already a lot of good work done by the community explaining how peering works and how to go about peering
 - We are working to pull it together and make it available in one place
 - The toolbox is intended to be the reference point for best practice information.
- Target audience:
 - Everyone involved with peering!
 - Which means: service providers, enterprises, content providers, research & education networks, IXPs,...

Peering Toolbox

- Website focused on learning:
 - Short sections with clear explanations of each topic
 - Easy for new entrants to discover what they need to make the best decisions for their network
 - Easy for organisations already peering to learn about current best practices, keep up to date with technology, and help with troubleshooting connectivity and reachability issues
 - Advice from experienced peers sharing tips and tricks
 - Use of the IXPDB and the PeeringDB

Current work

- Philip Smith hired as Product Manager
 - 25+ years experience
 - BGP, IXP, peering, routing workshops
 - Capacity building and technical training all over the world
- Inventory of resources created
 - <https://www.peeringtoolbox.net>
 - beginners section done!
 - Under development - an interactive toolbox



What is the Peering Toolbox?

The Peering Toolbox is designed to be a quick access reference guide to network operators who want to understand the steps need to go through to find and set up peering for their network with other infrastructure operators.

Our Services



Beginner

If you are new to peering, this is the section of the Toolbox for you.

[Learn more](#)

Intermediate

If you know what needs to be done to set up peering with another entity, but would like a ready reference for verification of the steps you need to take, this is the section for you.

[Learn more](#)

Advanced

For peering experts, a repository of tips, tricks, advice, troubleshooting, good practice, etc.

[Learn more](#)

Beginner

If you are new to routing and BGP, and are interested to learn more what peering is and what it means, this is the section of the Toolbox for you.



 Let's Chat!

What is a Network Operator

Learn about what a network operator is.

[Learn more](#)

What is Transit

This section of the Toolbox describes the Internet ecosystem and how network operators interconnect with each other to create what we know as the Internet.

[Learn more](#)

What is Peering

This section of the Toolbox describes the Internet ecosystem and how network operators interconnect with each other to create what we know as the Internet.

[Learn more](#)

What is an Internet Exchange Point

An Internet Exchange Point (IXP) is an open neutral interconnect where network operators can interconnect for the purpose of exchanging traffic.

[Learn more](#)



The Internet Eco-System

The global Internet is made up of all types of network infrastructure operators. Learn about the different categories in this section.

[Learn more](#)

 [Let's Chat!](#)

More Introductory Material

Importance of Peering

Operators peer with each other to:

- reduce costs
- reduce latency
- improve service quality
- have “unlimited” bandwidth
- have direct relationships with other operators

[Learn more](#)

Where to Peer?

This section of the Toolbox describes the where a network operator would seek peering. Learn about private peering and public peering.

[Learn more](#)

What is required for Peering?

This section of the Toolbox describes what a network operator needs before embarking on their peering journey.

[Learn more](#)

Establishing Peering

This section of the Toolbox describes what a network operator needs to do next.

[Learn more](#)





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Interactive Session

- Euro-IX Association for IXPs
- Without the Peers there would be no IXP
- Today's presentation highlights some of the activities we do that can be helpful to the larger community
 - IXPDB
 - Peering Toolbox
- Now I want to hear from you on what tools and data you use to help make peering decisions.
- What's useful and what more can we do....



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Thank You!

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