The Peering Toolbox

Documenting Peering Best Practices

APNIC 54
14th September 2022

Philip Smith – Euro-IX

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

Today

- 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

euro-IX

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

euro-ix

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?

euro-ix

Peering Toolbox
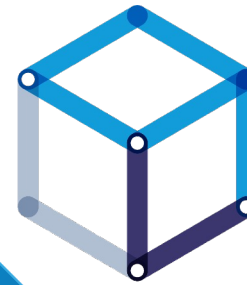
Community Focused Learning Tool

peeringtoolbox.euro-ix.net

euro-ix

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

euro-IX

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,...

euro-IX

Peering Toolbox

- New website will be launched very soon

- Focus is on learning
  - Sections focusing on newcomers, existing peers, and advanced topics
  - Short sections with clear explanations of each subject

- Purpose:
  - To make it easy for new entrants to discover what they need to make the best decisions for their networks
  - Advice for organisations already peering to learn about current best practices, keep up to date, and help with troubleshooting
  - Advice from experts to share tips and tricks

euro-ix

Euro-IX Peering 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.
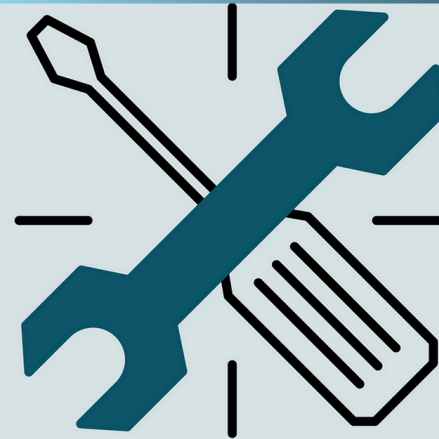
Coming soon

Advanced

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

Coming soon

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.

Interconnections

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

What is peering

Peering is the connection of one network operator to another network operator to exchange traffic originated by each network operator.
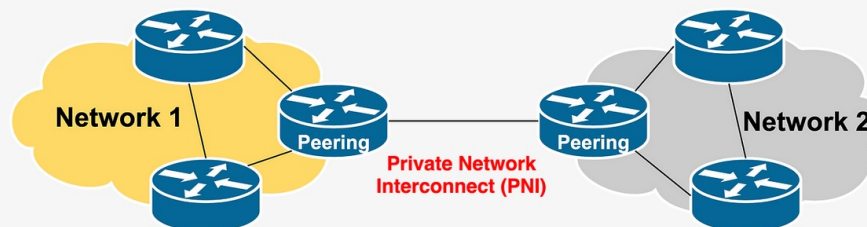The vast majority of peering does not attract traffic charges - it is known as "settlement-free peering".
Peering takes place in two forms:
1. Private Peering
2. Public Peering

Private Peering

Private peering is where there is a private connection between the two network operators for the purpose of exchanging traffic. This is usually known as a Private Network Interconnect, or PNI for short.

The physical interconnect is owned jointly by the two operators, and can range from a simple fibre or copper cross-connect in a datacentre, to a long haul link (fibre optic or wireless) between each operators data centre.

The Importance of Peering

In the previous section, we learned how Network Operators fit into the global Internet ecosystem. We also learned that they can peer with other networks, or buy transit from other networks, or both.

Operators peer with each other to:

- reduce costs
- reduce latency
- improve service quality
- access to content
- have "unlimited" bandwidth
- have direct relationships with other operators

This section covers the value proposition for end-site networks to consider adding Peering capabilities to their existing Internet access provision.

Costs

The commercial part of the Internet is highly competitive with many network operators vying to provide the highest quality service to their end users at the lowest possible cost.
Apart from staff and equipment costs, the other significant cost of providing Internet access is to actually obtain that access to the whole of the Internet.

Peering Toolbox – Helping out!

- Looking for community members to help improve the Toolbox:
    - Feed back on the existing content (once website launched)
    - Content suggestions/contributions for the Advanced Section
    - Areas not already covered
    - Ongoing improvements to the content

- Contact us: peeringtoolbox@lists.euro-ix.net

euro-ix

Thank you

Philip Smith
Peering Toolbox PM
Euro-IX

euro-IX