The Peering Toolbox

Documenting Peering Best Practices

EPF2022

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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?

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peeringtoolbox.euro-ix.net

Peering Toolbox

Community Focused Learning Tool

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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://bgp4all.com/pfs/peering-toolbox/
  - Still under construction
  - Under development - an interactive toolbox

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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

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Home About Beginner Intermediate Advanced

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.

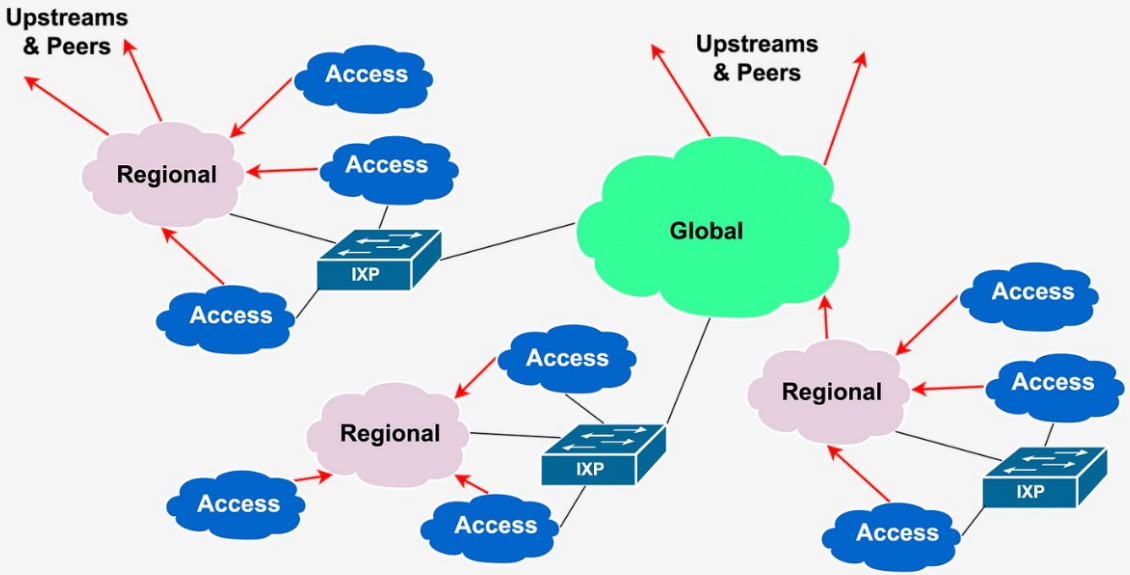
Learn more

Global Providers

Global providers normally have a presence in two or more continents (for example, North America and Europe, or Europe and Asia, or Africa and Europe).

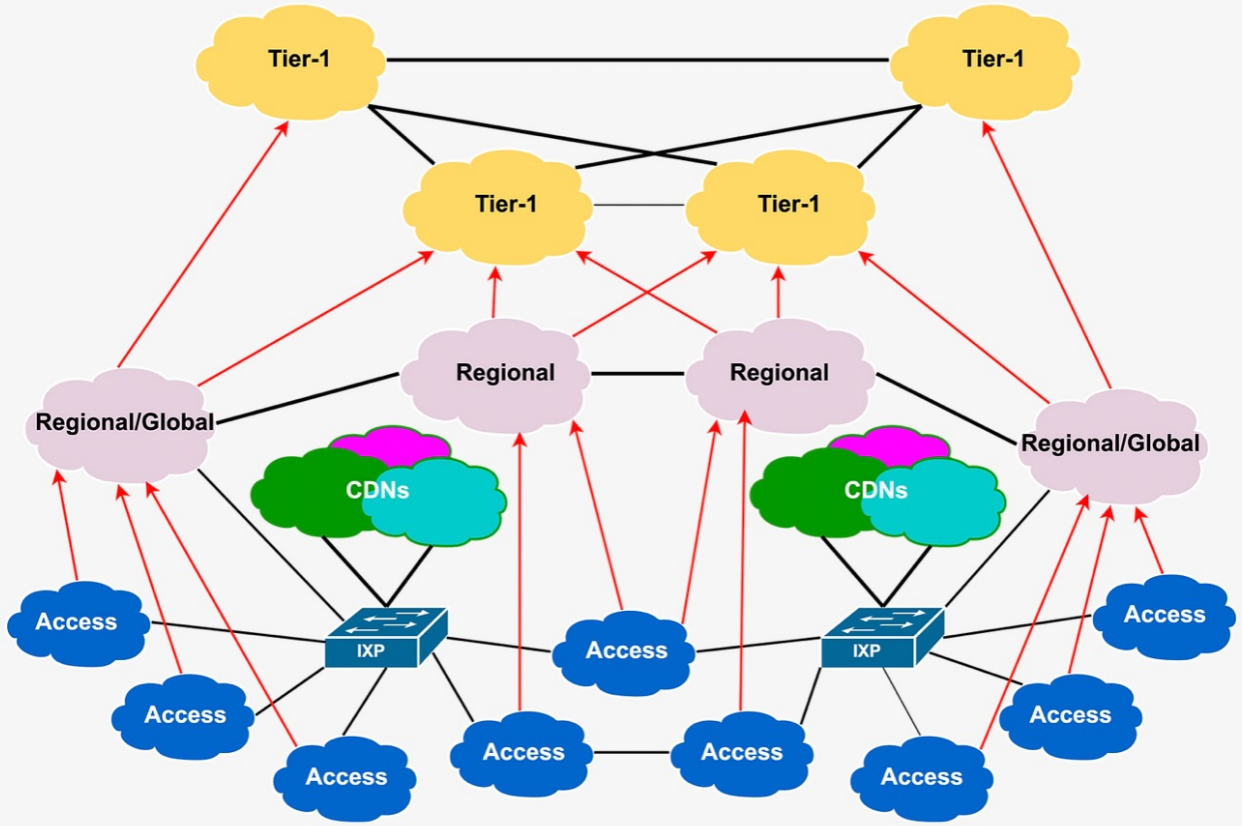
They provide transit to Access and Regional Providers, but are unlikely to be Access Providers themselves (or they may own subsidiaries in several countries who operate access networks).

They might participate at Internet Exchange Points (either directly or through those specific local subsidiaries).



How does it fit together?

This diagram shows (approximately) how the Internet fits together. The lines with arrows represent transit links, and the lines without arrows are peering links. CDNs and Content Providers congregate around Internet Exchange Points so they are closest to their customers, the end-users.



Peering Toolbox – next steps

IXPs

- Share your information
  - Use cases
  - Instructions
  - Training material, online courses, tutorials
- We will reference your material and give you credit and exposure

Networks

- Share your experience
  - Instructions to “new” peers
  - Common mistakes, educational material, emails, peering policies
  - Presentations given at various forums
- Get in touch for interviews or anonymous case studies

peeringtoolbox@lists.euro-ix.net

Peering Toolbox – then what?

- Website to go live
  - Use it, refer peers to it!
  - Link to it from your website
- Continuous improvement
  - Improve it, give us feedback!
  - Add your content to it
- Mailing list: peeringtoolbox@lists.euro-ix.net
- Philip Smith <philip@euro-ix.net>

Thank you

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