



Peering Negotiations at AfPIF

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disclaimer: all opinions are all mine



Peering Principles

- 99.5% of all Internet peering is done by "handshake" (source: PCH, 2011)
- Peering is unregulated (almost) worldwide
- Peering arrangements are made voluntarily based on mutual benefit
- If there is no peering in place, all of the Internet is reachable via transit

The Internet has successfully scaled for >20 years without regulation:

- 8 orders of magnitude increase in traffic
- 5 orders of magnitude decrease in unit price

**"That will be \$0.0000008 for IP transit, or
100,000x more for voice please"**

Source: [OECD](#)



Benefits of Peering

- For users:
 - Lower latency
 - Higher reliability
 - Better performance
- For network operators:
 - Lower costs
 - Higher reliability
 - More predictable routing
 - Better performance for customers
 - No third parties involved
 - Mutually beneficial relationship with partner



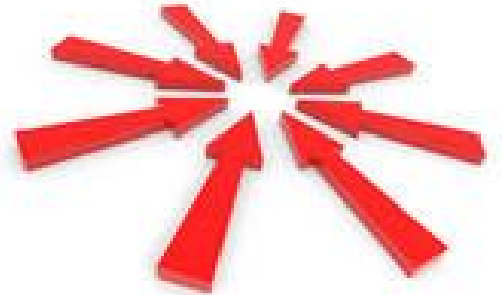
Who are peering managers?

- IP engineers
- Network planners
- CTOs
- Sales people
- Marketing
- ...

Prerequisites for Peering

Technical requirements for Peering:

- Public AS in use
- Public IP address block in use
- Register your AS on www.peeringdb.com
- Presence at a mutual location
 - IX or private peering location



How to Peer (using AfPIF Meetingtool!)

1. Define your objectives
2. Register for the Meeting Maker site
3. Book a meeting
4. Have a meeting at AfPIF, discuss peering
5. Set up the peering
6. Profit!

1. Decide on your objectives

Who should I meet and why?

AfPIF attendees include:

- Network Operators
 - your competitors
 - similar operators in other countries
- Internet Exchanges, both local and global
- Content Providers and CDNs
- Hosting Providers and datacentres
- Educational institutions
- Regulators and government officials

Who should I peer with?

- Check your traffic volumes
 - Netflow/Sflow analysis
 - Proxy and cache logs
 - Ask the other network...
- Look for key local content and access providers
- Review
 - lists of members at Internet Exchanges
 - lists of operators in facilities
- Check the other party's peering policy

Where to peer?

- PeeringDB.com has
 - List of all networks and where they peer
 - List of all facilities and who is there
 - List of all IXPs, where they are and who peers there

TIX - Tanzania		Peers at this Exchange Point <input type="text" value="Filter"/>		
Organization	TISPA - Tanzania Internet Service Providers Association	Peer Name ▼	IPv4	Speed
Long Name	Tanzania Internet eXchange	ASN	IPv6	Policy
City	Dar es Salaam	Airtel Tanzania	196.46.120.185	1M
Country	TZ	37133	None	Open
Continental Region	Africa	Akamai Technologies	196.223.5.54	10G
Media Type	Ethernet	20940	None	Open
Protocols Supported	<input checked="" type="radio"/> Unicast IPv4 <input type="radio"/> Multicast <input checked="" type="radio"/> IPv6	Aptus Solutions	196.223.5.38	1G
Contact Information		37349	2001:43f8::26	Open
Company Website	http://tix.or.tz/	Arusha Internet Exchange Point	196.223.5.222	100M
Traffic Stats Website		33791	None	Open
Technical Email	info@tix.or.tz	Habari Node Ltd.	None	100M
Technical Phone		33791	None	Open
Policy Email	info@tix.or.tz	ISC	196.223.5.11	1G
Policy Phone		27319	2001:43f8::b	Open
LAN		Liquid Telecommunications	196.223.5.53	1G
		30844	2001:43f8::35	Open
		Packet Clearing House	196.223.5.12	1G
		42	2001:43f8::c	Open
		Packet Clearing House	196.223.5.13	1G
		3856	2001:43f8::d	Open
		SEACOM Limited	196.223.5.50	10G
		37100	2001:43f8::32	Open



2. Register for Meetingtool site



MeetingTool.net <no-reply@meetingtool.net>
to me ▾

Jul 22 ☆ ↶ ▾

<https://afpif2016.meetingtool.net/>



Hello Thomas Volmer,

You are receiving this message because you have been signed up with the MeetingTool for the event African Peering and Interconnection Forum 2016!

Since you already have an active account with the MeetingTool, simply confirm your participation for the current event:

[Confirm participation!](#)

Your username for login is: tvolmer@google.com

LOGIN





Username

Password

[Forgot your password?](#)



3. Find a delegate to meet with

	Ben Roberts C.E.O	Liquid Telecommunications Operations Ltd (Liquid Telecom)	Nudge
			Attendee is inactive, nudge him to activate
	MANOUMBA ONDELI Roland Chef de service TrÈs Haut dÈbit	ARPCE	Nudge
			Attendee is inactive, nudge him to activate
	Erik Rowberg Managing Director	Habari Node Ltd and Arusha Internet Exchange	Actions <input type="checkbox"/>
			Visit Profile Invite View Schedule Write Message
	Bhasker Rughani Director	Cable Television Network (CTV) Ltd	
			Attendee is inactive, nudge him to activate

4. Have a meeting!

- Your meeting location is in your schedule



Table 2

- Peering is built on ***relationships***
- Make sure you understand each other's objectives, costs, and benefits
- Find a mutually agreed place to peer
- Agree action items and next steps



Negotiating Peering

How to encourage someone who doesn't want to peer with you, to peer with you?

- Exchange lots of traffic (e.g. host content on your network if they are an eyeball network)
- Find another location to peer in, that works for both sides
- Buy another operator who already has peering
- Leverage a broader business arrangement
- Make friends
 - Buy them beer/juice/dinner... :-)

5. Set up the peering (the easy part)

```
router bgp 12345
  neighbor 2001:1:2:3:4:1:5169:1 remote-as 15169
  address-family ipv6 unicast
    neighbor 2001:1:2:3:4:1:15169:1 prefix-list announce-my-ipv6 out
```



Conclusions

Do your research, then...

1. Define your objectives
2. Sign up for the Meeting Maker tool
3. Meet some potential peers
4. Exchange ideas, details, agree to set up peering
5. Set up peering
6. Enjoy better performance, and lower costs!