Af-IX Meeting

A Looking Glass is Not a Vanity Item!

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So you run an IXP...

- we’re assuming you have a switch and peers are connected, and traffic exchanged.
  - Or at least you know exactly how to get that done
- You have a website, telling all everybody needs to know about your IXP.
- You collect traffic statistics, and publish them (aggregate statistics) on the web.
- If that’s not all the case, the above should be first priority.

What else can you do to make your IXP “do better” ?

You can add:

- DNS services
- AS112 instance
- NTP (time) servers
- RPKI servers
- RIPE Atlas probe or anchor

And now we talk about:

- Looking Glass

Which of these items is most urgent, and which most easily done can depend on your situation.

Something is required...

- For all of the mentioned “Value added services”, Internet access to your management network / devices / servers is needed.
  - Since your participants are ISPs, you might have good a relationship with them and some might be able to give that for free to the IXP.
- Even for publishing statistics, which you’ve already done.
- We assume that’s in place already.
- You can configure a new server / VM in your management network
  - it’s accessible from the Internet

Terminology

- Management network
  - For administering the IXP, separate from the peering LAN!
- Route Server (RS)
  - Talking BGP to peers and relaying advertisements to others.
- Route Collector (RC)
  - Talking BGP to peers, receiving advertisements, and not sending any; optionally recording for archives, researchers
- Looking Glass (LG)
  - Public web interface to route advertisement information
  - Info from RS or RC

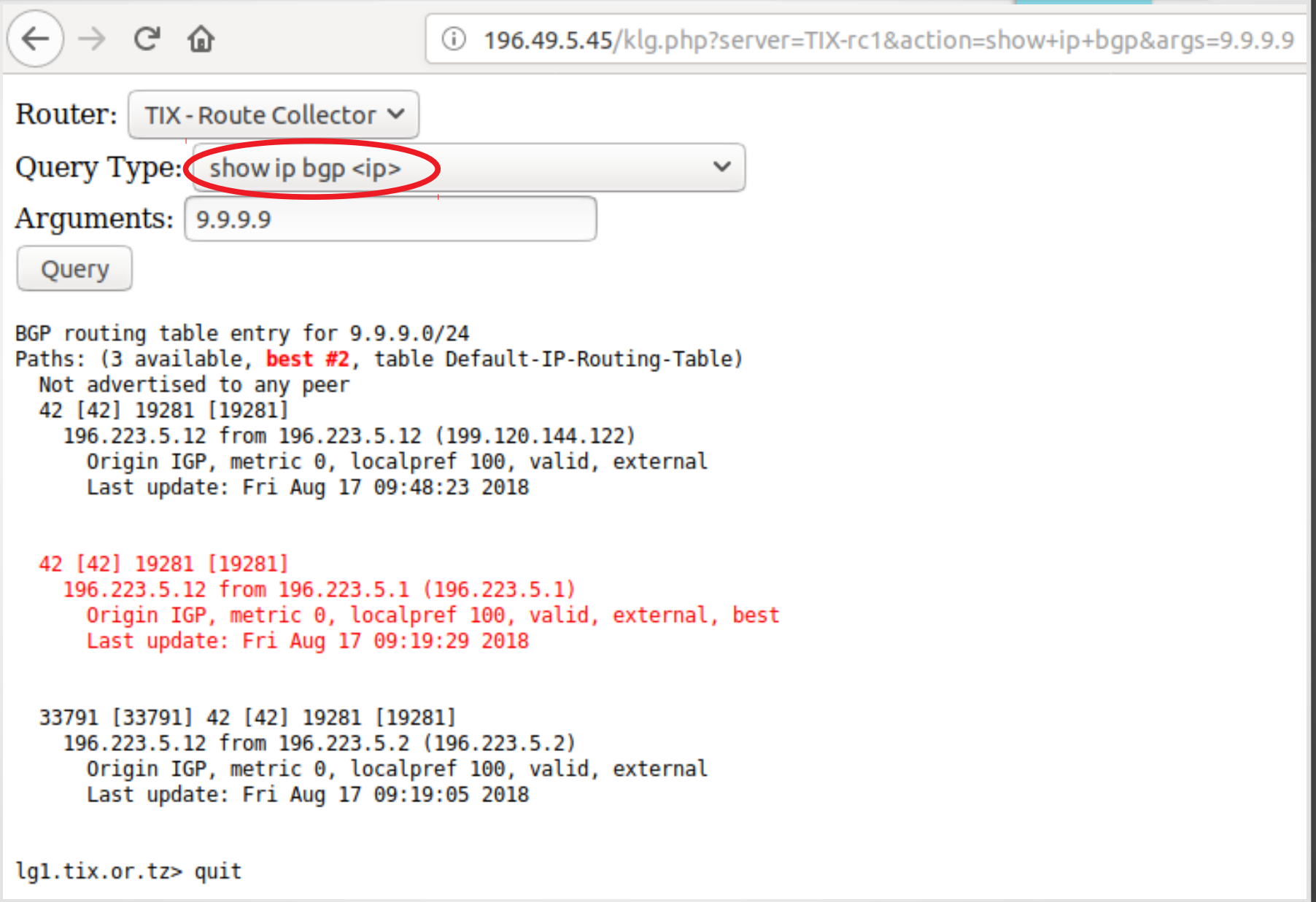
Who uses a Looking Glass?

- Users or technical people at ISPs (or other network operators), who are debugging routing issues
- Prospective peers trying to see who is present at your IXP, and what are these current peers advertising

So it makes it easier for a new peer to see what's happening, justify joining your IXP to their management.

Presence of the LG says something good about your know-how as IXP operator.

Example 1

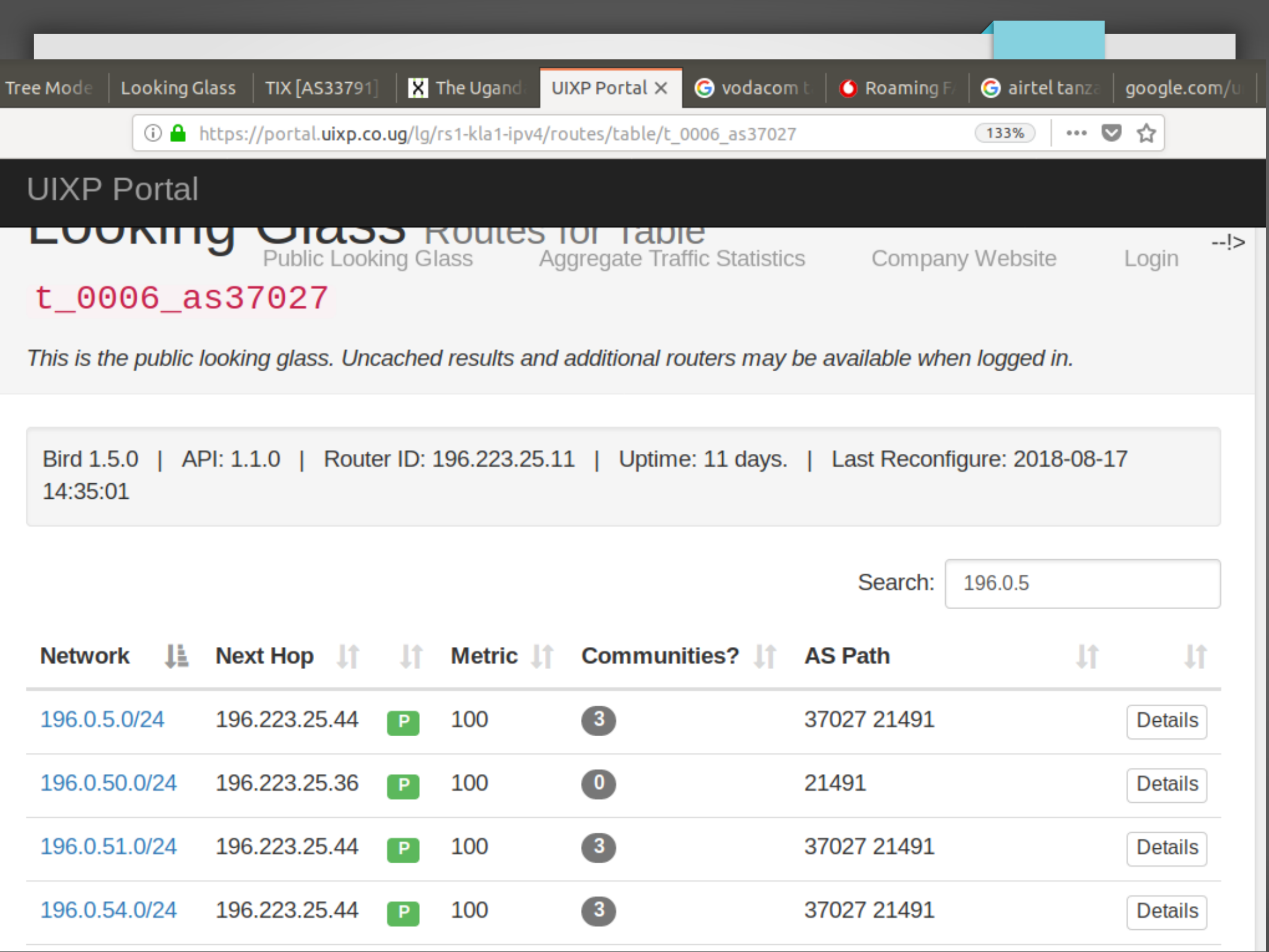

196.49.5.45/klg.php?server=TIX-rc1&action=show+ip+bgp&args=9.9.9.9
Router: TIX - Route Collector
Query Type: show ip bgp <ip>
Arguments: 9.9.9.9
Query
BGP routing table entry for 9.9.9.0/24
Paths: (3 available, best #2, table Default-IP-Routing-Table)
Not advertised to any peer
42 [42] 19281 [19281]
196.223.5.12 from 196.223.5.12 (199.120.144.122)
Origin IGP, metric 0, localpref 100, valid, external
Last update: Fri Aug 17 09:48:23 2018
42 [42] 19281 [19281]
196.223.5.12 from 196.223.5.1 (196.223.5.1)
Origin IGP, metric 0, localpref 100, valid, external, best
Last update: Fri Aug 17 09:19:29 2018
33791 [33791] 42 [42] 19281 [19281]
196.223.5.12 from 196.223.5.2 (196.223.5.2)
Origin IGP, metric 0, localpref 100, valid, external
Last update: Fri Aug 17 09:19:05 2018
lg1.tix.or.tz> quit

Example 2

- Email from a “user” in Uganda, to his provider and me (SimbaNET), last Friday
- Sub-optimal routing, passing through 2 networks unnecessarily, source and destination networks are connected to UIXP
- Traceroute / mtr was supplied
- During troubleshooting I could add helpful info by including in my email this URL:
  https://portal.uixp.co.ug/lg/rs1-kla1-ipv4/routes/protocol/pb_0020_as29032

Example 3

- Private ASNs seen in a peer’s announcements in the LG
- Already fixed, no screen shot
  - Cisco “remove-private-as” had to be added


Tree Mode
Looking Glass
TIX [AS33791]
The Ugand
UIXP Portal
vodacom t
Roaming F
airtel tanz
google.com/u
https://portal.uixp.co.ug/lg/rs1-kla1-ipv4/routes/table/t_0006_as37027
133%
UIXP Portal
Looking Glass Routes for Table
Public Looking Glass
Aggregate Traffic Statistics
Company Website
Login
--!>
t_0006_as37027
This is the public looking glass. Uncached results and additional routers may be available when logged in.
Bird 1.5.0 | API: 1.1.0 | Router ID: 196.223.25.11 | Uptime: 11 days. | Last Reconfigure: 2018-08-17 14:35:01
Search: 196.0.5
Network
Next Hop
Metric
Communities?
AS Path
196.0.5.0/24 196.223.25.44 P 100 3 37027 21491 Details
196.0.50.0/24 196.223.25.36 P 100 0 21491 Details
196.0.51.0/24 196.223.25.44 P 100 3 37027 21491 Details
196.0.54.0/24 196.223.25.44 P 100 3 37027 21491 Details

In the Examples...

- In Example 1, using other parameters, you could find out that there's a private AS used for one peer :-(
  - They have been requested to change that ;-)
- In the screen shot you also see that one RS does still prepend its ASN :-(
  - there's a reason ;-)
- In Example 2 the user could have included output or URL of the LG showing that source and/or destination is advertised by IXP RS to the end-networks (peers)
- Example 4 (previous slide) shows one direct peer (AS21491) could advertise some prefixes to the IXP RS, but does only advertise to their upstream (AS37027)

If information from the LG is shared

- It shows that the reporting person has done some home work, is willing to contribute to fast resolution
- Assists with faster understanding at the recipients
- Faster escalation to the right folk at recipients
- Quicker resolution

A good feature

- Some Looking glasses (software) allows to use HTTP GET methods.
  - That’s good, the parameters can be in the URL
  - The URL including parameters can be shared (on email etc)
  - Recipients can click and get the same page (with updated data)
- Use that, if you have the choice
- Use software that supports this

What it does

- A Looking Glass allows users to do part of the work themselves.
- “Crowd-sourcing” - let people out there do some of the work.
  - If you want an article on wikipedia created or updated, you don’t wait and expect Wikipedia staff to do that ;-)

Finishing up

- Put a link to the Looking Glass on your IXP website
- It is useful to have a Looking Glass for both your RS and for your RC
- These can show different things
  - Not all peers might be on your RS – RC shows more
  - Data from the RS shows info affecting traffic flows
    - And cause of possible issues

Conclusion

- When are you getting it done?