Route Collecting on InterLAN with bgp.tools

Ben Cartwright-Cox - RONOG 9

bgp.tools

e822cc5ad7a88d6f37bfbc53e9bd1123

Quick overview of bgp.tools

bgp.tools AS212232

Browse the Internet ecosystem

Search by ASN (AS13335), Prefix (8.8.8.0/24), DNS (bgp.tools), or MAC Address (3c:ec:ef:6f:8d:75)

Start here...

Jump to Looking Glass

You are connecting from

- IPv6: 2a0c:2f07:4663:4::
- Ben Cartwright-Cox (AS206924)
- 2a0c:2f07:4663::/48
- DNS: 2a0c:2f07:4896::1
- DNS: 2a0c:2f07:29:666::5353
- DNS: 185.230.223.109

Latency to bgp.tools

- IPv4 End To End: 5.1ms
- IPv4 TCP Stack: 4.5ms [+/- 3.4ms]
- IPv4 TCP MSS: 1368b

- IPv6 End To End: 4ms
- IPv6 TCP Stack: 4.4ms [+/- 1.6ms]
- IPv6 TCP MSS: 1348b

Example Pages

- Cloudflare (AS13335)
- LINX LON1
- Google DNS Prefix

Recent Updates

- September 2024 Changelog
- August 2024 Changelog
- July 2024 Changelog
- May 2024 Changelog
- April 2024 Changelog

Why use BGP.Tools?

We offer for free:

- Near Realtime BGP Data
- User Friendly interfaces
- Frequently updated external data

We offer for paid users:

- BGP Network Monitoring
- IRR Database Monitoring

Scripting/API Credits Pricing Contact Us Issue Tracker Contribute Data

bgp.tools Start here...

Logged in as AS206924

View Edit Looking Glass Cone

DIGI ROMANIA S.A.

AS Number **8708**
Website **https://www.digi.ro**

Overview Prefixes Connectivity Whois IX

Registered on
27 Aug 2002 (22 years old)

Network status
Active, Allocated under RIPE

Network type
Eyeball

Prefixes Originated
132 IPv4, 6 IPv6

Upstreams

- AS1299 - Arelion (fka. Telia Carrier)
- AS174 - Cogent Communications
- AS3356 - Lumen (Level 3)
- AS41494 - Asociația InterLAN
- AS50819 - Cloud Vault SRL

Rankings

- #70 for Estimated Eyeballs Globally
- #2 for AS Cone in Romania
- #1 for Estimated Eyeballs in Romania

Tags:

Home ISP | Mobile Data/Carrier | Business Broadband | Tranco 10k Host | Tor services | Validating RPKI ROV

View | Edit | Looking Glass | Cone

DIGI ROMANIA S.A.

AS Number **8708**
Website **https://www.digi.ro**

Overview | Prefixes | Connectivity | Whois | IX

Prefixes Originated
132 IPv4, 6 IPv6
Show Low Visibility Prefixes

Addresses Originated
7491 /24's of IPv4
1114112 /48's of IPv6

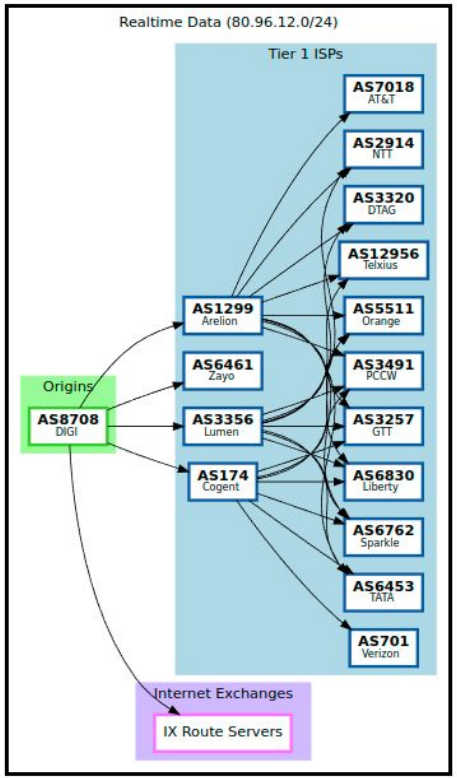
Prefix	Description
2.17.116.0/22	Akamai International B.V.
5.2.128.0/17	DIGI ROMANIA S.A.
5.12.0.0/14	DIGI ROMANIA S.A.
45.67.37.0/24	INSX CLOUD SRL
46.102.175.0/24	IPv4 Management SRL
62.231.64.0/18	DIGI ROMANIA S.A.

Core points

- Built out of the frustration I had with other tools, running it is now my job
- 2000~ BGP sessions established
- Realtime BGP data updates (as fast as I can receive the data from feeds)
- Frequently updated (~14 days):
  - ICMP Ping data scans of IPv4 /0
  - IPv4 and IPv6 reverse DNS data
  - Forward DNS data (Looking what A or AAAA records point to a prefix)
- IXP data is carefully processed
  - Detects IX members that don't exist on PeeringDB / IX-F, or members that have left, etc
- Lots of small quality of life features designed to make checking your own networks a lot easier

bgp.tools

Overview | Connectivity | Whois | DNS | Validation



▶ Chart Display Options

Overview | Prefixes | **Connectivity** | Whois | IX

Peers	Upstreams	Downstreams
1386	**7**	**101 (Cone: 179)**

How are upstreams and downstreams calculated?

Upstreams

	ASN	Description	IPv4	IPv6
	AS1299	Arelion (fka. Telia Carrier)	✔	✔
	AS6762	Telecom Italia Sparkle (Seabone)	✔	✔
	AS9002	RETN Limited	✔	✔
	AS5511	Orange S.A.	✔	✔
	AS41494	Asociația InterLAN	✔	✘
	AS5606	GTS Telecom SRL	✔	✘
	AS201387	Luxoft Professional Romania S.R.L.	✔	✘

Overview | Prefixes | **Connectivity** | Whois | IX

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	AS41494	Asociația InterLAN	✔	✘
	AS5606	GTS Telecom SRL	✔	✘
	AS201387	Luxoft Professional Romania S.R.L.	✔	✘

View

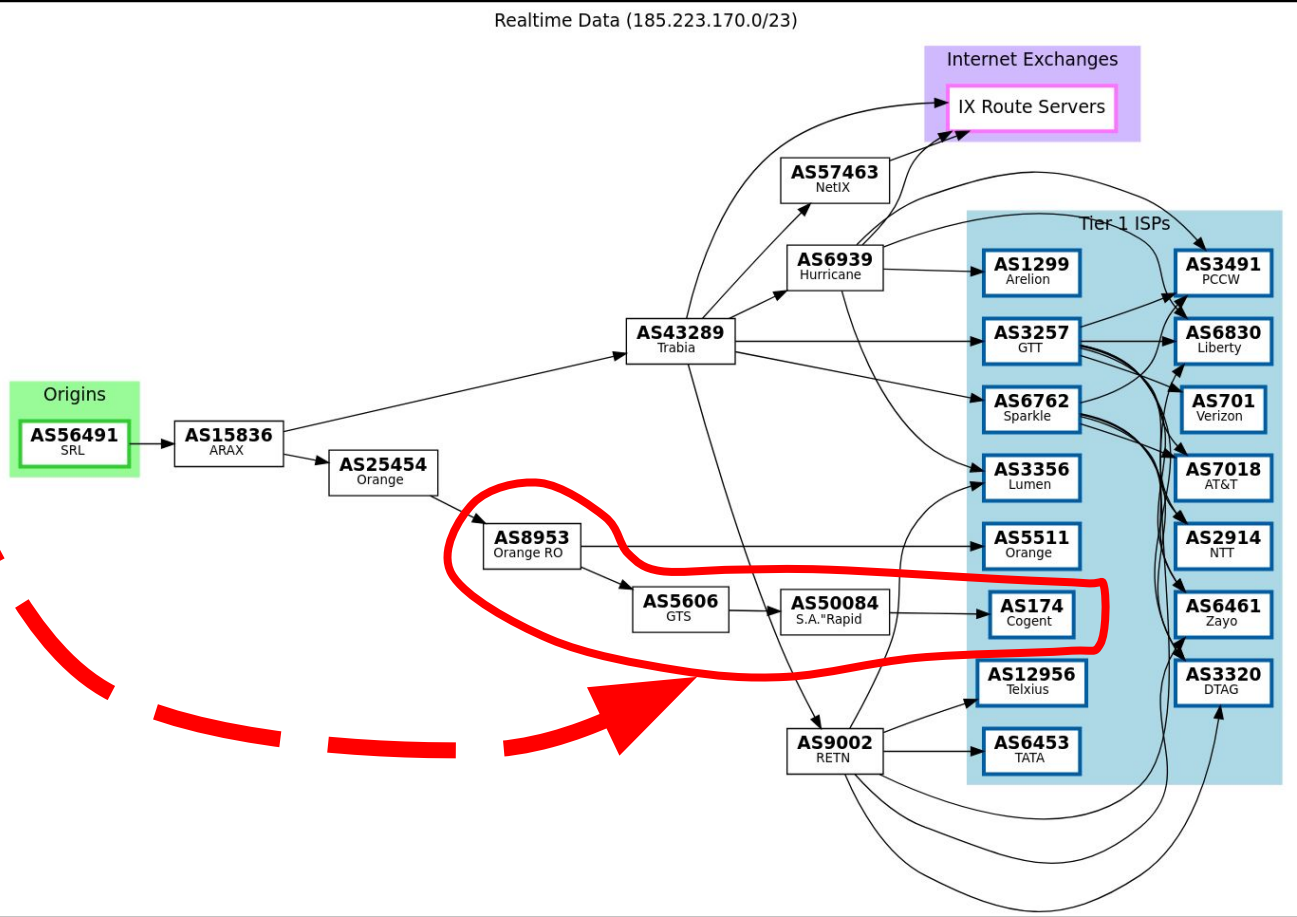
This page shows *some* of the BGP AS paths (and their prefix) that bgp.tools uses to learn that AS5606 (GTS Telecom SRL) is a upstream of AS8953 (Orange Romania S.A.).

This list is not exhaustive, and some paths might have been hidden due to the data feeds being non-exportable.

Prefix	BGP Path
45.67.116.0/24	AS329095 AS174 AS50084 AS5606 AS8953 AS25454 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818
185.223.170.0/23	AS52025 AS174 AS50084 AS5606 AS8953 AS25454 AS15836 AS15836 AS15836 AS15836 AS56491
185.223.168.0/23	AS40092 AS174 AS50084 AS5606 AS8953 AS25454 AS15836 AS15836 AS15836 AS15836 AS56491 AS56491 AS56491 AS56491
45.67.116.0/24	AS201217 AS131657 AS174 AS50084 AS5606 AS8953 AS25454 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818
45.67.116.0/24	AS51095 AS174 AS50084 AS5606 AS8953 AS25454 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818 AS43818
	AS57225 AS174 AS50084 AS5606 AS8953 AS25454 AS43818 AS43818

185.223.170.0/23

- Looks like a route leak!
- This looks (to me) unintentional



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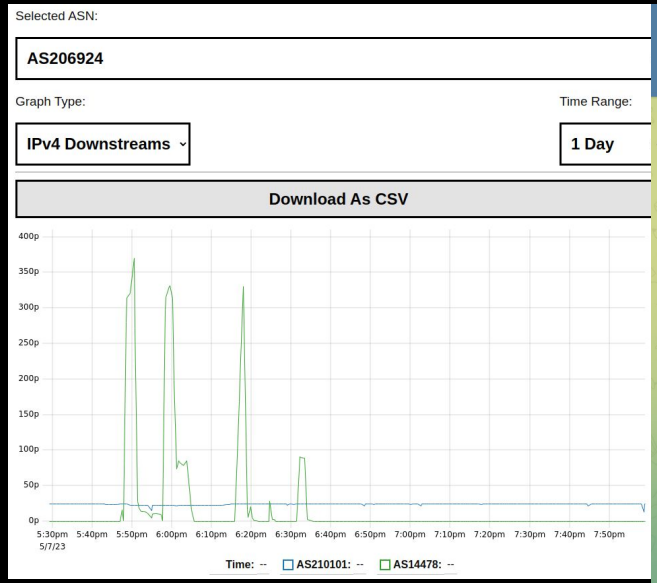
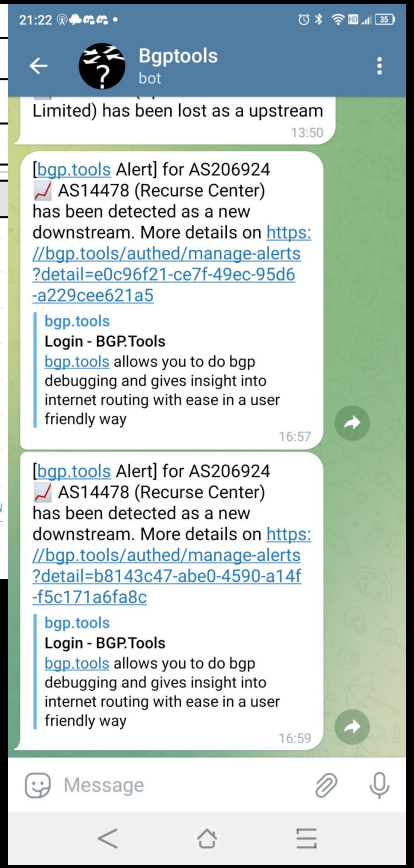
Bgp.tools offers paid monitoring services

- The site is funded by paid tools like:
- Rapid BGP/RPKI/IRRdb monitoring
- Managed looking glasses
- BGP Session data recording (and replay for incident review)
- Logo placement on Looking Glass





bgp.tools

Web UI | Terminal UI

Query all public BGP sessions connected to bgp.tools

Lookup by CIDR, only applies to sessions that have been marked to be exported publicly

185.230.223.0/24 →

Search Filters:

Must Contain ASN: 65000

☐ Invert ASN Filter

Query Overview:

764 Sessions Responded
1106 Matching Paths Displayed
333 Matching Private Paths Hidden

Supported by: RoyaleHosting

[?]

```
185.230.223.0/24     unicast [AS14840 - core01.spo2 0000-00-00] * (?/-) [AS206924]
 Type: BGP
 BGP.as_path: 14840 3356 3170 206924
 BGP.community: (14840,20) (14840,7110)
                     unicast [AS393746 - SRV2-v4 0000-00-00] * (?/-) [AS206924]
 Type: BGP
 BGP.as_path: 393746 393577 393577 1299 3356 3170 206924
 BGP.community: [AS1299: North American Peers]
 BGP.large_community: [AS393577: Learned via transit] (393746, 0, 12)
                     unicast [AS328977 - PE2_NBO1 0000-00-00] * (?/-) [AS206924]
 Type: BGP
 BGP.as_path: 328977 37100 3257 3170 206924
 BGP.community: (37100,1) (37100,13)
 BGP.large_community: (37100, 0, 328977)
                     unicast [AS3399 - BMA-4 0000-00-00] * (?/-) [AS206924]
 Type: BGP
```

```
[14:38:07] ben@metropolis:~$ ssh bgp.tools
Welcome 2a0c:2f07:                                This session is supported by:
```


```
For more information about AS137409, check out https://bgp.tools/as/137409
bgp.tools> show route 185.230.223.0/24 match 8953
185.230.223.0/24     unicast [{AS57050 - S.C. DreamServer...} TOOLS2 0000-00-00] *
S206924]
 Type: BGP
 BGP.as_path: 57050 8953 3170 206924
 BGP.community: (0,1239) [Do not announce to AS1239] (0,3216) [Do not announce to
0,3462) [Do not announce to AS3462] (0,6939) [Do not announce to AS6939] (0,8473)
nnounce to AS8473] (0,9498) [Do not announce to AS9498] (0,12552) [Do not announce
52] (0,15169) [Do not announce to AS15169] (0,25198) [Do not announce to AS25198]
 [Do not announce to AS28792] (0,31500) [Do not announce to AS31500] (0,34549) [Do
unce to AS34549] (0,35598) [Do not announce to AS35598] (0,37100) [Do not announce
00] (0,37662) [Do not announce to AS37662] (0,39602) [Do not announce to AS39602]
 [Do not announce to AS39737] (0,43545) [Do not announce to AS43545] (0,45758) [Do
unce to AS45758] (0,57463) [Do not announce to AS57463] (0,58453) [Do not announce
53] (0,63949) [Do not announce to AS63949] (0,64049) [Do not announce to AS64049]
4) (8714,65010) (8714,65012) (60945,0) (64513,1000)
 BGP.large_community: (3170, 0, 0) (3170, 1, 900) [AS3170: Origin - route learned
stream customer] (3170, 2, 1) [AS3170: Origin - route learned in UK] (3170, 3, 1)
Origin - route learned in London] (3170, 4, 2) [AS3170: Origin - route learned in
xion LON1] (8714, 0, 205479) (8714, 0, 206924) (8714, 1000, 1) (8714, 1001, 2) (20
, 0)
                     unicast [{AS57050 - S.C. DreamServer...} TOOLS1 0000-00-00] *
S206924]
 Type: BGP
```

IXP Listings

- Lists who is on the exchange including
  - What vendor they are using
  - If they are pingable
  - If they are announcing to the route servers
  - If they are sending any weird packets to broadcast
- Data is combined from PeeringDB / IX-F / Route Server data

bgp.tools

InterLAN-IX

Go to PeeringDB page

Go to IXP-DB page

Route Server ASN: AS39107

Data Feeds Available:

☑ RS Feed, ☑ Ping, ☑ MAC Address

Toolbox

- ▶ Top Vendors
- ▶ Top Route Server Next Hops
- ▶ Route Server BGP Looking Glass
- ▶ Peering LAN IP Ranges
- ▶ Filtering Options

List of members (161 routers over 135 ASNs):

	ASN	Description	IPv4	IPv6	Speed
	AS39107	InterLAN Route Servers	86.104.125.1	2001:7f8:64:225::1	1000 mbps
	AS39107	InterLAN Route Servers	86.104.125.2	2001:7f8:64:225::2	1000 mbps
RS	AS47734	Telecom IT Solutions SRL	86.104.125.25	2001:7f8:64:225:0:4:7734:1	100 gbps
RS	AS41151	Digital IT Consulting SRL	86.104.125.41	2001:7f8:64:225:0:4:1151:1	10 gbps
RS ⚠	AS39668	Intersat SRL	86.104.125.47	2001:7f8:64:225:0:3:9668:1	10 gbps
RS	AS44682	SIL-MIRO COM SRL	86.104.125.49	2001:7f8:64:225:0:4:4682:2	10 gbps
RS	AS44682	SIL-MIRO COM SRL	86.104.125.50	2001:7f8:64:225:0:4:4682:1	10 gbps

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InterLAN-IX

Go to PeeringDB page

Go to IXP-DB page

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RS	AS41151	Digital IT Consulting SRL	86.104.125.41	2001:7f8:64:225:0:4:1151:1	10 gbps
⚠	AS39668	Intersat SRL	86.104.125.47	2001:7f8:64:225:0:3:9668:1	10 gbps
RS	AS44682	SIL-MIRO COM SRL	86.104.125.49	2001:7f8:64:225:0:4:4682:2	10 gbps
RS	AS44682	SIL-MIRO COM SRL	86.104.125.50	2001:7f8:64:225:0:4:4682:1	10 gbps

So what is a route collector?

bgp.tools

So what is a route collector?

- A BGP peer that has extra software/configuration to record BGP routes send to it

- **They do not use the BGP routes they receive to send traffic to via you**

- They sometimes announce test prefixes (RIPE RIS) to health check if the internet is working correctly

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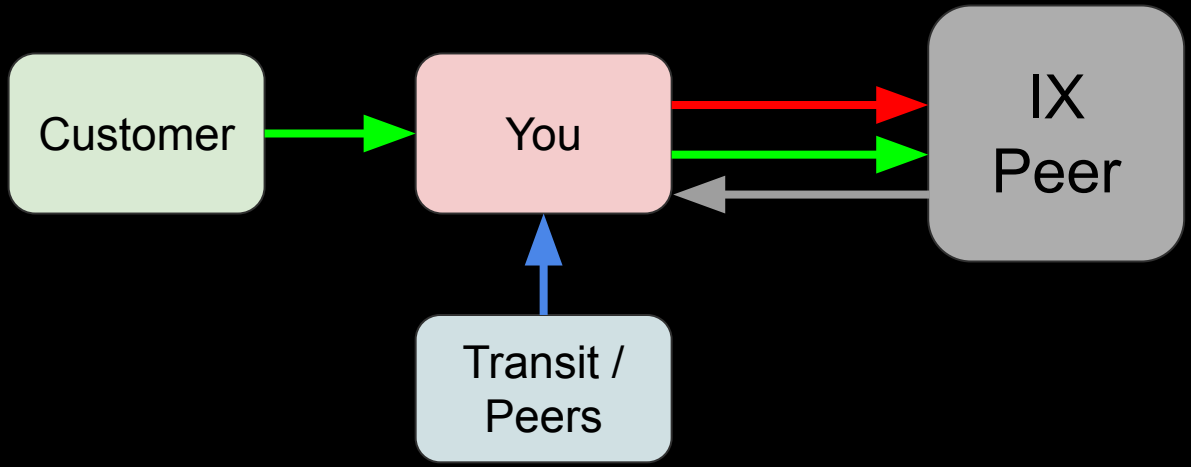
Route collectors are a weird kind of IX peer

- For a typical IX peer, you send your own and your customers routes



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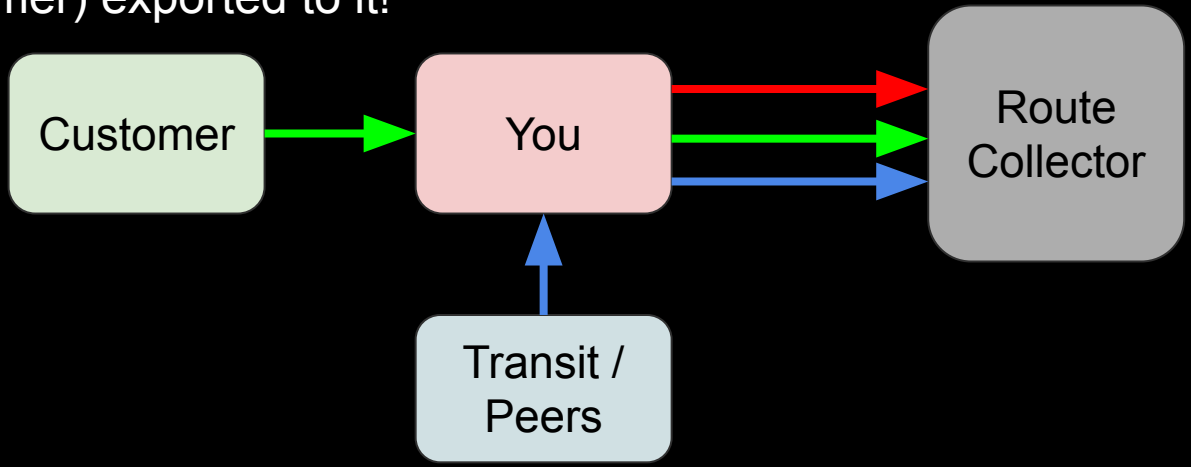
Route collectors are a weird kind of IX peer

- Ideally a route collector gets all of your routes (that you would send to a customer) exported to it!



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Route Collectors are helpful to the health of the internet

- Because the internet is a network of networks, not everyone has the same view of the internet

- Route collectors fill the role of collecting data for people to use for debugging, research, and incident response

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Route Collectors are helpful to the health of the internet

- Because the internet is a network of networks, not everyone has the same view of the internet

- Route collectors fill the role of collecting data for people to use for debugging, research, and incident response
  - The February 2008 Pakistan youtube hijack incident would not have been as well understood without RIPE RIS and RouteViews, there are countless more modern examples

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Feeding bgp.tools data

- Go to https://bgp.tools/kb/setup-sessions
- Login with PeeringDB (or register a bgp.tools account)
- Add contact details, so I can tell you if it goes down or isnt sending a full table, etc.
- Fill out the new session form
- **Sessions are instantly approved and provisioned**

bgp.tools

New BGP Session:

Description for Router/Session: (max 16 chars)

LHR01

Select the ASN you would like us to use for you. We will only accept AS212232 (bgp.tools), AS206924 AS212232 , and Private ASN ranges

212232

Select the ASN you are going to use with us. We will only accept AS206924 AS212232 and Private ASN ranges

212232

Select the IP you will be connecting from.

192.0.0.1 / 2001:db8::

You will get the remote (bgp.tools side) IP after you create the session.

Please send **Full tables** rather than just your peering routes/customer routes. bgp.tools may automatically switch your sessions to only import your peering routes to save RAM, but allow us to figure that out for future flexibility!

We support (and encourage) BGP AddPath, and MultiProtocol/MultiFamily BGP

If you absolutely need a MD5 Password on the session, please enter the desired MD5 password

☐ Export this data into publicly available MRT files (also enables the public looking glass)

☐ Also allow other commercial products to use those MRT files

☐ Send notifications if session is down for more than 2 hours

Create BGP Session

Feeding bgp.tools data

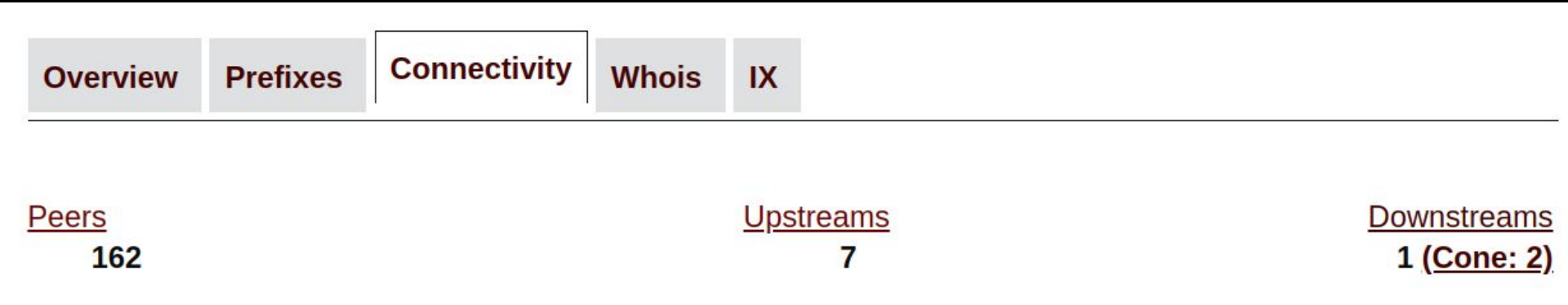
bgp.tools

What is in it for you?

bgp.tools

Benefits to feeding bgp.tools

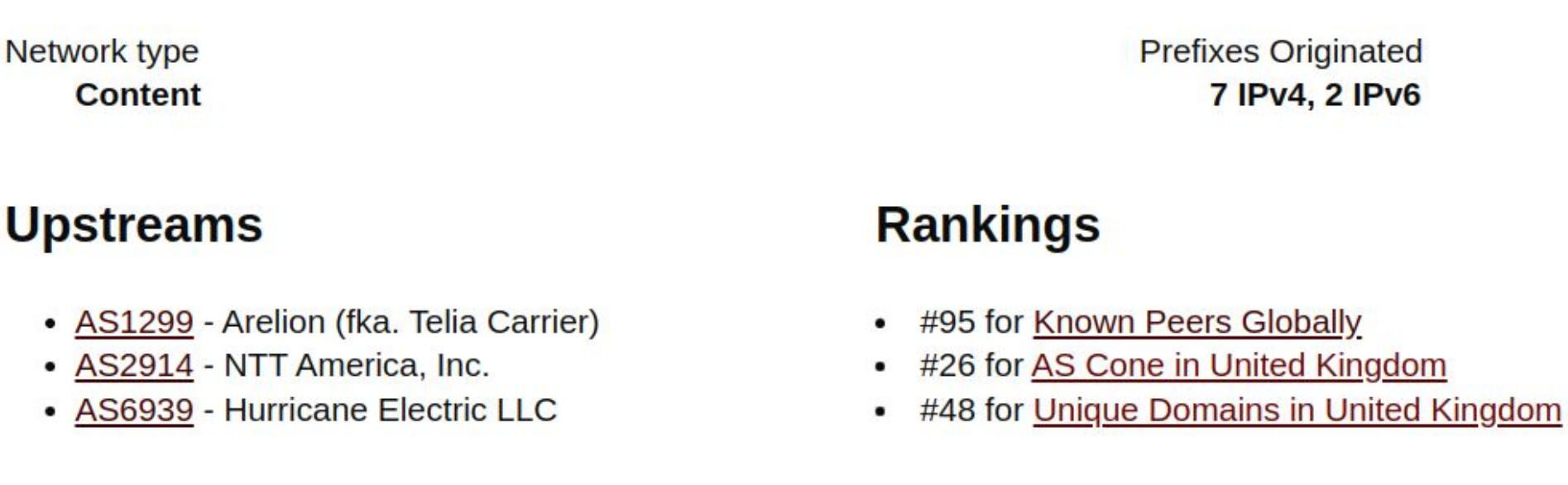
- The site can correctly display your peer count! Some customers or prospects consider a higher peer count a attractive thing



bgp.tools

Benefits to feeding bgp.tools

- The In-Country and Global peer rankings that bgp.tools offers will likely improve, since bgp.tools then knows who you are peering with!



Start here...

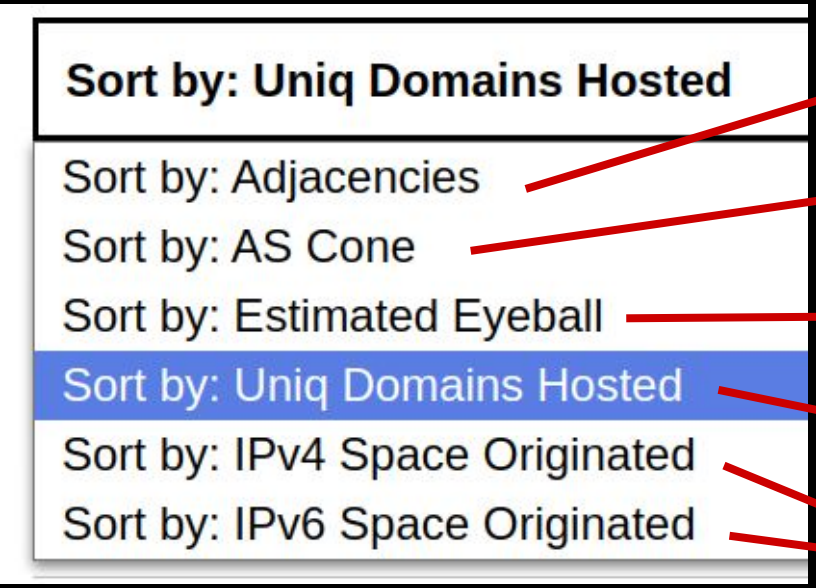
Romania Network Rankings

Sort by: AS Cone

Learn more about how these ranks are calculated

AS	Name	Peer Rank	Cone Rank	Eyeball Rank	Host Rank	v4 Space Rank	v6 Space Rank
AS6663	Türk Telekom International	#7 (377)	**#1** (559)	#28	#47 (480)	#13 (51.5 K)	#13 (96.0 K)
AS8708	DIGI ROMANIA S.A.	#3 (981)	**#2** (391)	#1	#7 (18.2 K)	#1 (1.8 M)	#3 (1.1 M)
AS6204	INTERKVM HOST SRL	#1 (2874)	**#3** (314)	#141	#174 (8)	#61 (512)	#18 (4.0 K)
AS12302	Vodafone Romania S.A.	#10 (214)	**#4** (274)	#2	#18 (2.9 K)	#4 (993.5 K)	#2 (2.1 M)
AS9050	Orange Romania S.A.	#6 (474)	**#5** (260)	#7	#16 (3.2 K)	#2 (1.4 M)	#15 (64.0 K)
AS8953	Orange Romania S.A.	#2 (1375)	**#6** (179)	#3	#32 (1.1 K)	#6 (205.8 K)	#15 (64.0 K)
AS9009	M247 Europe SRL	#5 (530)	**#7** (140)	#4	#3 (58.3 K)	#3 (1.2 M)	#1 (3.9 M)
AS5606	GTS Telecom SRL	#9 (304)	**#8** (132)	#26	#2 (69.0 K)	#8 (89.8 K)	#6 (640.0 K)
AS39737	Prime Telecom srl	#8 (317)	**#9** (110)	#10	#29 (1.2 K)	#13 (51.5 K)	#30 (4)
AS47734	Telecom IT Solutions SRL	#4 (829)	**#10** (89)	#141	#182 (0)	#62 (256)	#33 (1)
AS12310	iNES GROUP SRL	#17 (76)	**#11** (84)	#22	#22 (1.7 K)	#12 (55.0 K)	#15 (64.0 K)
AS41494	Asociația InterLAN	#22 (32)	**#12** (38)	#141	#174 (8)	#61 (512)	#33 (1)
AS31313	Serviciul de Telecomunicatii Speciale	#20 (48)	**#13** (29)	#13	#44 (535)	#17 (20.5 K)	#8 (512.0 K)
AS8751	MEDIA SAT SRL	#25 (29)	**#14** (28)	#54	#43 (553)	#18 (19.2 K)	#32 (2)
AS34304	Teen Telecom SRL	#22 (32)	**#15** (27)	#68	#65 (273)	#22 (16.0 K)	#5 (704.0 K)

Ranking Types



- How many ***observable*** peering links do they have
- How many networks are downstream of them
- How many human users are there behind the network
- How many unique websites are there behind the network
- How much IP space are they originating?

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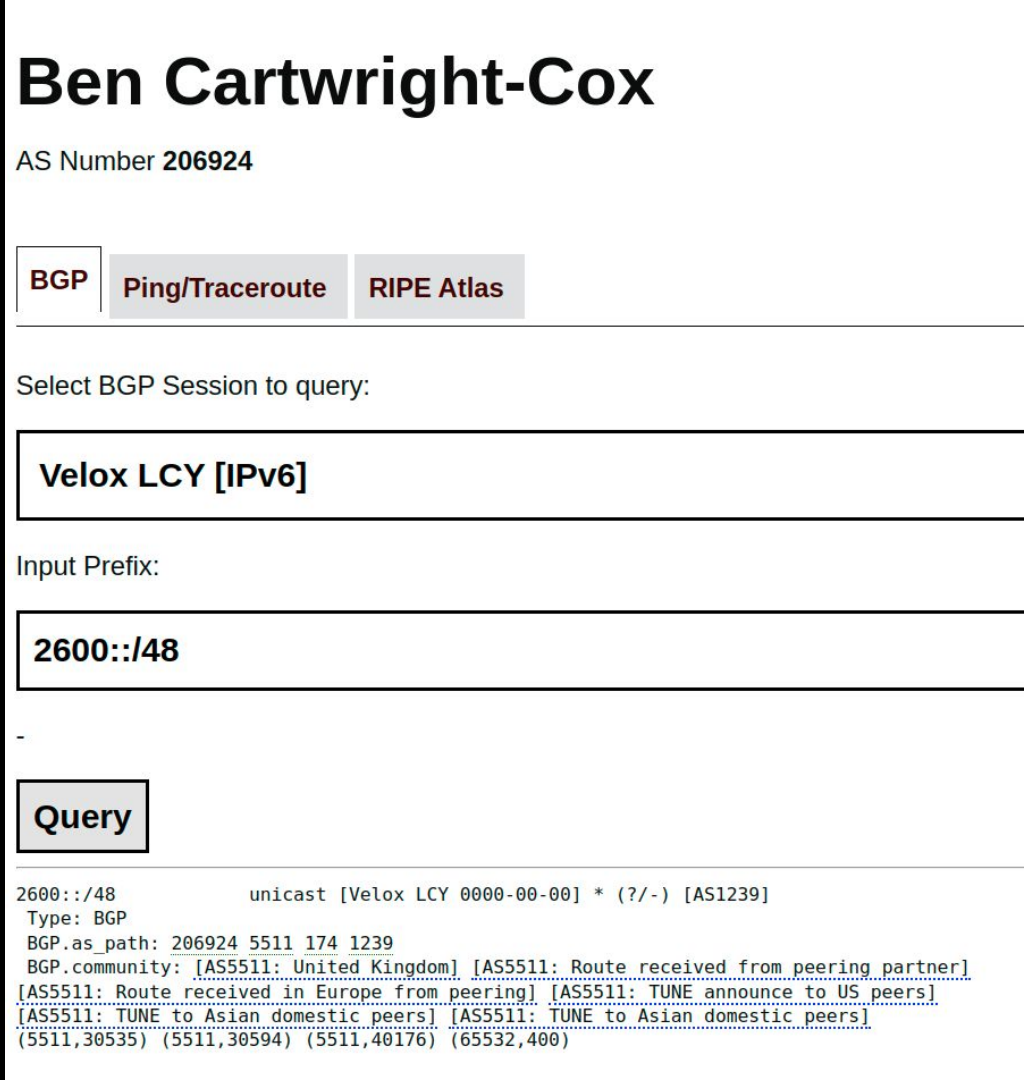
Benefits to feeding bgp.tools

- You can opt in to having a looking glass for your ASN on bgp.tools
- This may complement your existing looking glass, or give your customers a change to access a looking glass at all!

bgp.tools



What about other route collectors?

bgp.tools

Other route collectors are available

- A lot of the BGP route collectors are still underserved in many regions.
- You can help by feeding them wherever possible.
- Here are the links to setup sessions:

Service	Instant Signup	URL
RIPE RIS	No (IXP+Multihop)	Is not accepting new sessions right now
RouteViews	No (IXP+Multihop)	https://www.routeviews.org/routeviews/index.php/peering-request-form/
bgp.tools	Yes (IXP+Multihop)	https://bgp.tools/kb/setup-sessions
Radar	Yes (Multihop)	https://radar.qrator.net/ (Login to account, in settings)

IX Route Collector Availability Breakdown

IXP	RIS	RouteViews	bgp.tools
LINX LON1	Yes	Yes	Yes
DE-CIX	FRA	Many	Many
AMS-IX	Yes	Yes	Yes
InterLAN	Yes	No	Yes
ASN:	12654	6447	212232

Questions?

Want to feed bgp.tools?

go to bgp.tools and go to to bottom link "Contribute Data"

More complex queries:
IRC: Benjojo-bgptools (terahertz) / benjojo (everything else)
Email: **admin@bgp.tools**

bgp.tools