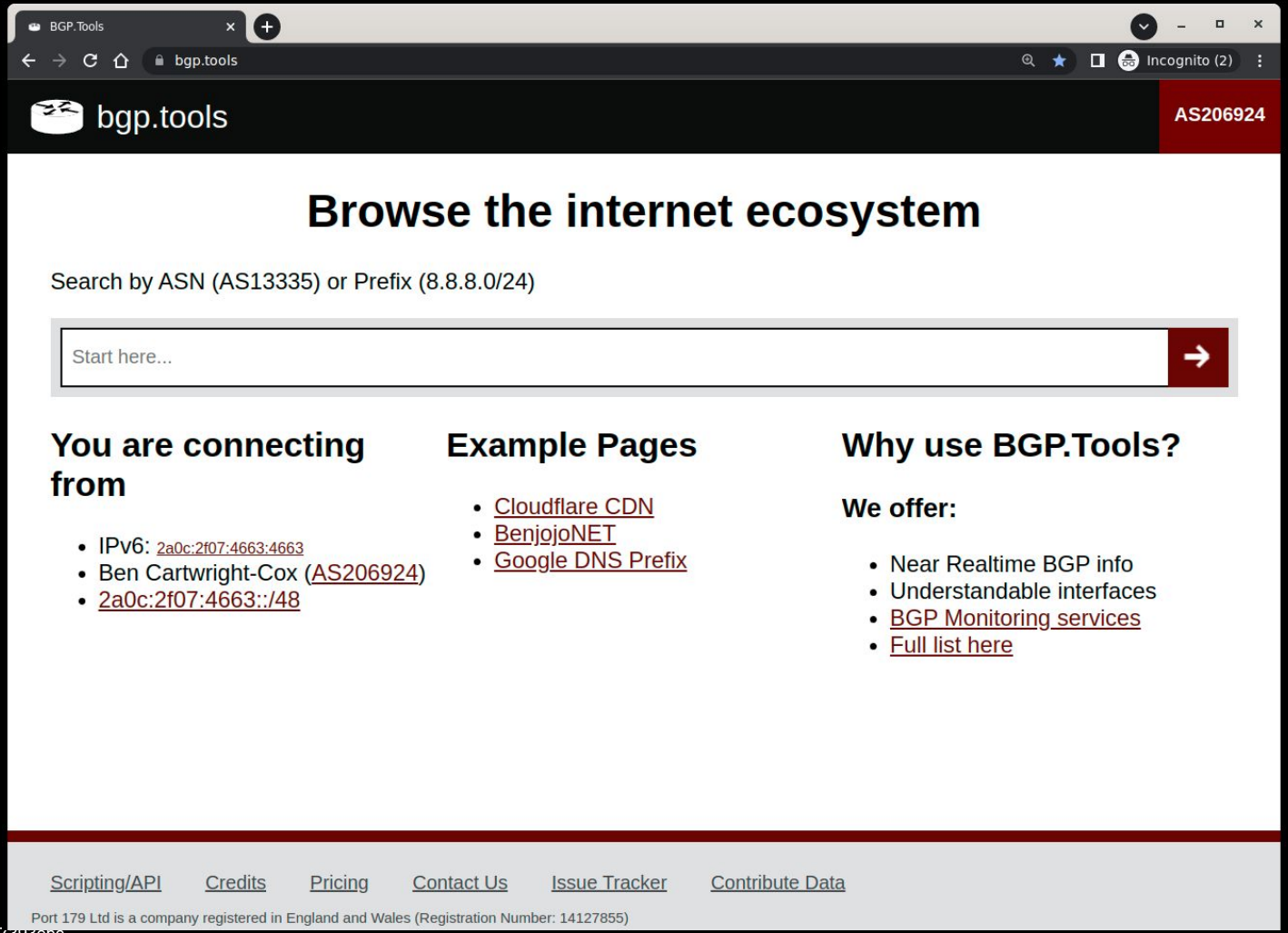
The unending misery of  bgp.tools

Ben Cartwright-Cox
@ UKNOF50 - Sep 22 2022

9744861519993fc285fd922057393ebc

Est Apr 2018



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```
[01:05:21] ben@metropolis:~$ routeviews
Trying 195.66.241.146...
Connected to route-views.linx.routeviews.
Escape character is '^]'.

Hello, this is FRRouting (version 7.3-rv)
Copyright 1996-2005 Kunihiro Ishiguro, et

route-views.linx.routeviews.org> show bgp
BGP routing table entry for 185.230.223.0
Paths: (37 available, best #33, table def
  Not advertised to any peer
  61955 44684 206924
    195.66.224.13 from 195.66.224.13 (62.
      Origin IGP, valid, external
      Large Community: 44684:0:900 44684:
      Last update: Tue Mar  8 21:14:15 20
  58511 44684 206924
    195.66.238.214 from 195.66.238.214 (1
      Origin IGP, valid, external
      Community: 58511:200 58511:9007
      Last update: Tue Mar  8 15:59:08 20
  398465 44684 206924
    195.66.227.122 from 195.66.227.122 (2
```

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HURRICANE ELECTRIC INTERNET SERVICES

Search

AS206924 Ben Cartwright-Cox

Quick Links

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AS Info | Graph v4 | Graph v6 | Prefixes v4 | Prefixes v6 | Peers v4 | Peers v6 | Whois | IRR | IX

Company Website: https://blog.benjojo.co.uk

Country of Origin: United Kingdom

Internet Exchanges: 2

Prefixes Originated (all): 9
Prefixes Originated (v4): 1
Prefixes Originated (v6): 8

Prefixes Announced (all): 11
Prefixes Announced (v4): 3
Prefixes Announced (v6): 8

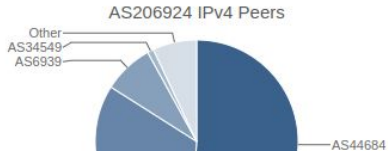
RPKI Originated Valid (all): 8
RPKI Originated Valid (v4): 1
RPKI Originated Valid (v6): 7

RPKI Originated Invalid (all): 0
RPKI Originated Invalid (v4): 0
RPKI Originated Invalid (v6): 0

BGP Peers Observed (all): 39
BGP Peers Observed (v4): 30
BGP Peers Observed (v6): 33

IPs Originated (v4): 256
AS Paths Observed (v4): 477
AS Paths Observed (v6): 1,538

Average AS Path Length (all): 4.042
Average AS Path Length (v4): 3.658
Average AS Path Length (v6): 4.161

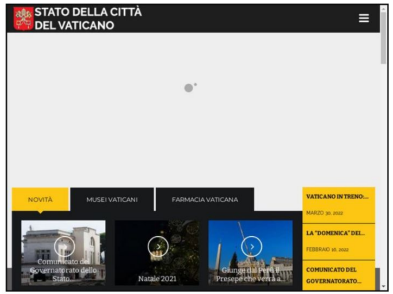


ASN	Name
AS44684	Mythic Beasts Ltd
AS3170	Etheroute Ltd
AS6939	Hurricane Electric LLC
AS34549	meerfarbig GmbH & Co. KG

Start here...

Logged in as AS206924

View | Edit



Holy See - Vatican City State

AS Number **8978**

Website **http://www.vaticanstate.va**

Overview | Prefixes | Connectivity | Whois

Overview | Prefixes | Connectivity | Whois | IX

Registered on
9 Apr 2002 (20 years old)

Network status
Active, Allocated under RIPE

Network type
Unknown

Prefixes Announced
2 IPv4, 1 IPv6

Upstreams

- AS174 - Cogent Communications
- AS3356 - Lumen (Level 3)
- AS3257 - GTT Communications Inc.
- AS137 - Consortium GARR
- AS12874 - Fastweb SpA
- AS12637 - Seeweb s.r.l.

Locations of Operation

- Holy See (Vatican City State)
- Italy

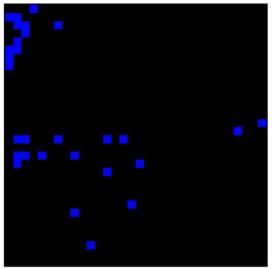
Tags:

bgp.tools/prefix/193.4

Start here...

Logged in as AS206924

View | Edit



193.43.128.0/22

Announced by **AS8978**

Overview | Connectivity | Whois | DNS | Validation

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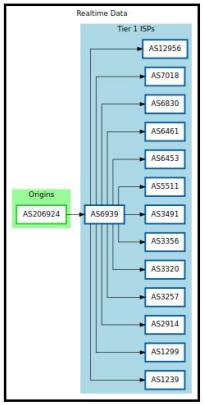
Quality of life tweaks included

2a0c:2f07:f::/48

Announced by AS206924

Overview | Connectivity | Whois | DNS | Validation

This prefix is not reachable from Cogent on IPv6 (What does that mean?)



How are upstreams and downstreams calculated?

Upstreams

	ASN	Description
	AS6939	Hurricane Electric LLC

Peers

This prefix is not reachable from Cogent on IPv6 (What does that mean?)

Upstreams

	ASN	Description
	AS6939	Hurricane Electric LLC

Peers

	ASN	Description
	AS56655	TerraHost AS
	AS945	hkgo LLC
	AS2495	Kansas Research and Education Network
	AS36236	NetActuate, Inc
	AS60326	MrSheepNET LTD

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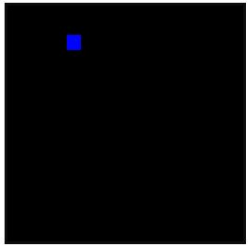
Handles annoying edge cases

209.112.123.0/24

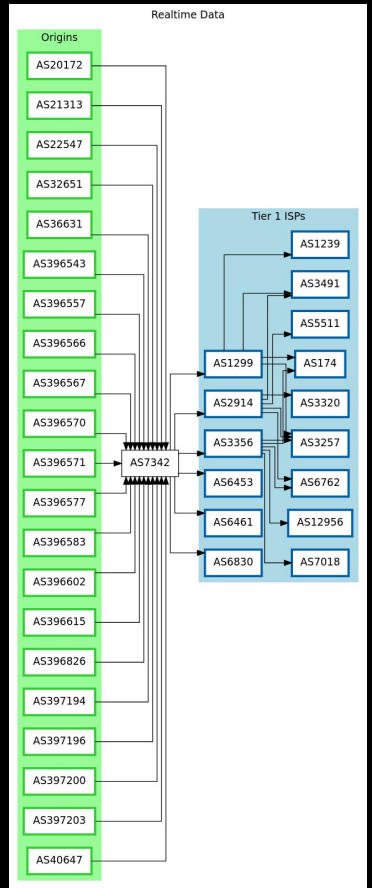
Announced by AS396566, and 21 others



Overview | Connectivity | Whois | DNS | Validation

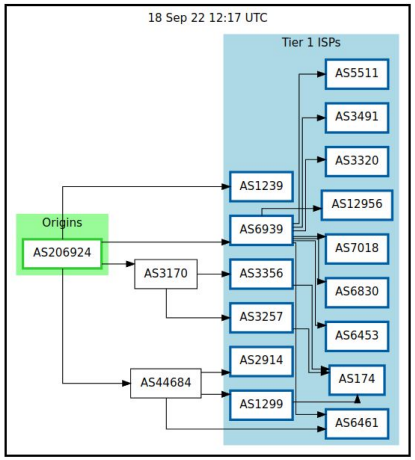
Originators

	ASN	Description
	AS396566	VeriSign Global Registry Services
	AS32651	VeriSign Global Registry Services
	AS396576	VeriSign Global Registry Services
	AS396616	VeriSign Global Registry Services
	AS397194	VeriSign Global Registry Services
	AS396548	VeriSign Global Registry Services
	AS397196	VeriSign Global Registry Services
	AS397203	VeriSign Global Registry Services



Networks are broken up into policies

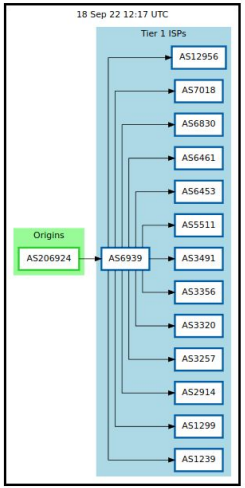
Policy blissful_hoover



Prefixes in selected policy

-	Prefix	Description
	2a0c:2f07:4896::/48	Colo in interxion LON3
	2a0c:2f07:9459::/48	Shared v6 services
	2a0c:2f07:29::/48	Colo in Cambridge business park

Policy upbeat_gould



Prefixes in selected policy

-	Prefix	Description
	2a0c:2f07:f::/48	KCIX Sitelocal
	2a0c:2f07:d::/48	KleyReX Sitelocal

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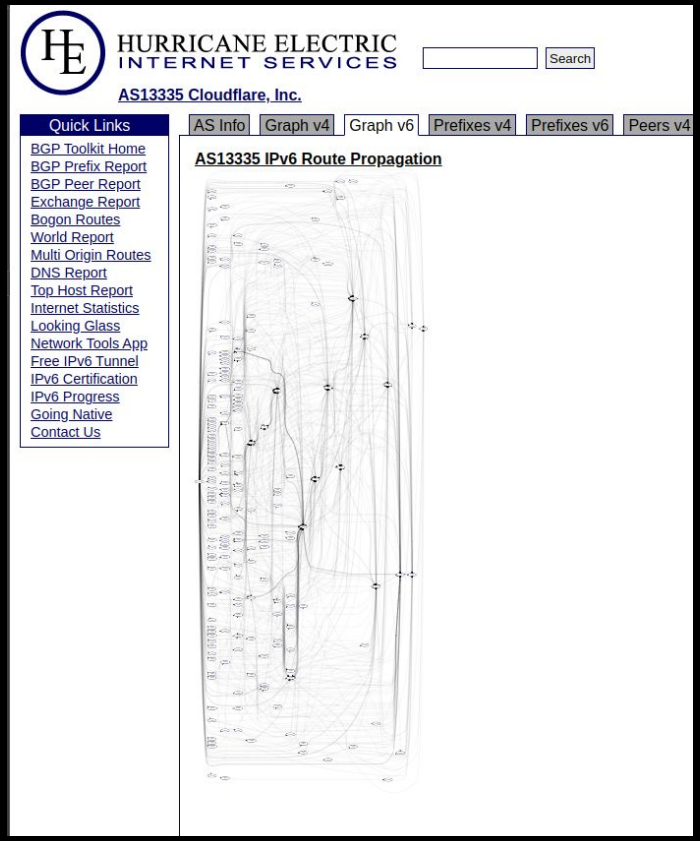
Avoids situations like this:



GraphViz Routing Spaghetti

Features - bgp.tools

bgp.tools/features

Incognito (2)

Data Freshness

When debugging issues, data freshness is critical, not all data sets can be gathered instantly, so here is a list of how long it takes us to fetch infomation from various sources

Source	Last Updated
BGP Sessions Online	404 out of 410
Edits awaiting Moderation	0
Website Screenshots	Best Effort: 7 Days
RIPE+APNIC ASN and Prefix Whois	24 hours
All other Whois	Best Effort: 2 Months (Often Faster)
Automatic Network Tagging	7 Hours ago
IPv4 Ping Scans	Every 30 days
Internet Exchange Point testing	Every 24 hours
PeeringDB Import	5 Hours ago
IPv6 RDNS Scans	Every 30 days
IPv4 RDNS Scans	14 days after the SOA serial changes
IPv4 Anycast detection scan	6 Hours ago
IPv6 Anycast detection scan	5 Hours ago

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Slightly more adventurous for data sources

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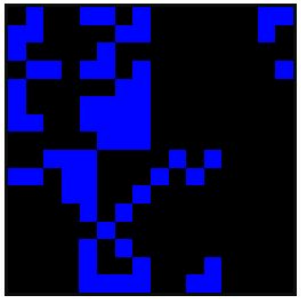
AS33891	Core-Backbone GmbH	195.66.224.238	2001:7f8:4::8463:1	400 gbps
AS61226	Flexiscale Technologies Limited	195.66.224.239	2001:7f8:4::ef2a:1	10 gbps
AS21396	NetConnex Broadband Ltd.	195.66.224.240	2001:7f8:4::5394:1	10 gbps
AS30827	Extraordinary Managed Services Ltd	195.66.224.241	2001:7f8:4::786b:1	10 gbps
AS35598	Inetcom LLC	195.66.224.242	2001:7f8:4::8b0e:1	10 gbps
AS12390	KCOM GROUP LIMITED	195.66.224.243	2001:7f8:4::3066:2	40 gbps
AS8881	1&1 Versatel Deutschland GmbH	195.66.224.245	2001:7f8:4::22b1:1	100 gbps
AS212263	Rocket Fibre Ltd	195.66.224.246	2001:7f8:4::3:3d27:1	10 gbps
AS50957	MEMSET Ltd	195.66.224.247	2001:7f8:4::c70d:1	10 gbps
AS35399	Online50 Limited	195.66.224.248		100 mbps
AS34066	Telappliant Limited	195.66.224.249		10 gbps
AS199335	Talk Straight Ltd.	195.66.224.250		10 gbps
AS2906	Netflix Streaming Services Inc.	195.66.224.251	2001:7f8:4::b5a:3	100 gbps
AS6663	Turk Telekom International	195.66.224.252	2001:7f8:4::1a07:1	10 gbps

Detected Vendor: IBM Corp

View | Edit

185.186.64.0/24

Announced by AS202562



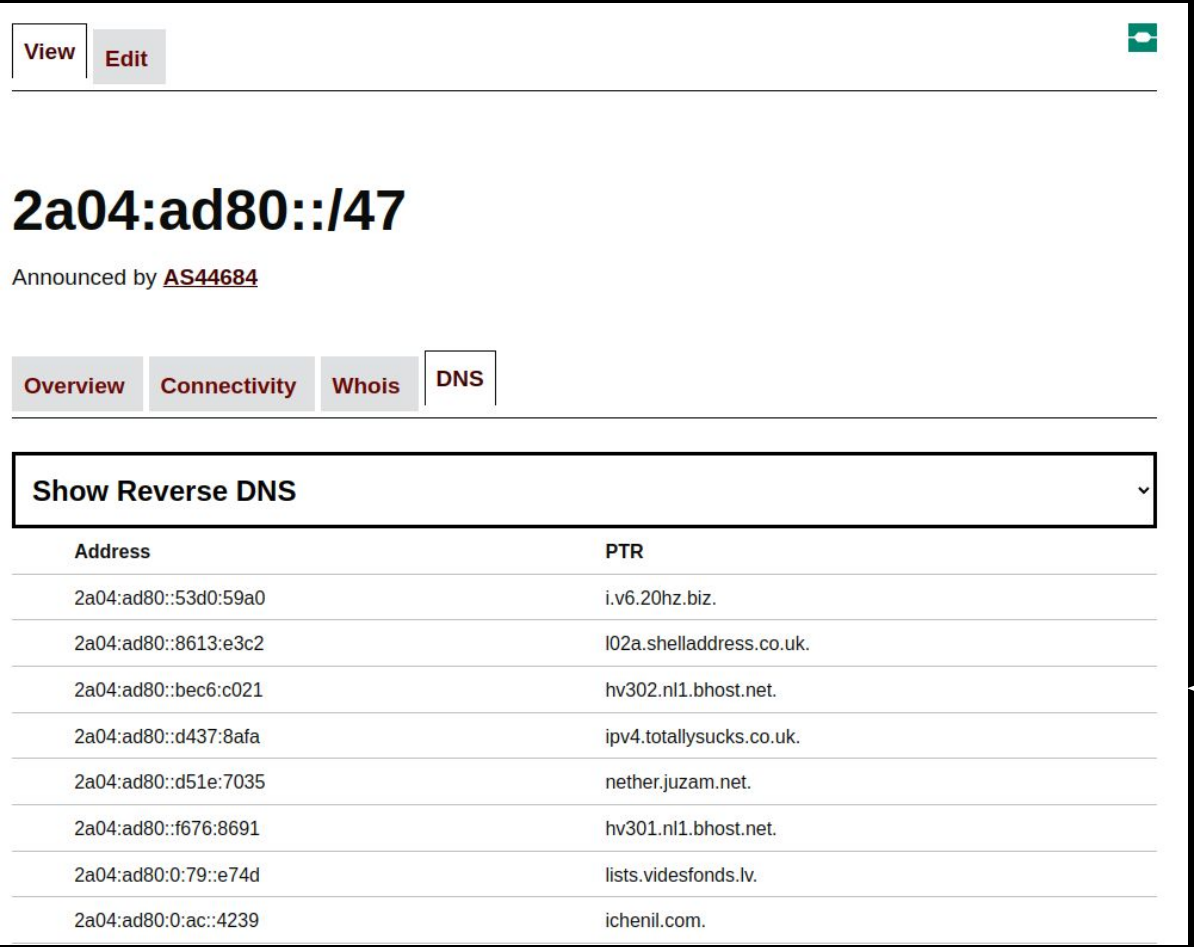
Overview | Connectivity | Whois | DNS | Validation

Show Reverse DNS

Address	PTR
185.186.64.1	core2.ein.aperture-networks.net.
185.186.64.2	core1.ams.aperture-networks.net.
185.186.64.3	core1.ein.aperture-networks.net.
185.186.64.4	core1.fra.aperture-networks.net.
185.186.64.5	core1.ciab.aperture-networks.net.
185.186.64.6	core1.mci.aperture-networks.net.
185.186.64.8	core1.lax.aperture-networks.net.

Full ICMP /0 scan every 30 days

RDNS gets re-scanned if the DNS SOA changes



RDNS scanning also works on IPv6*

* Assuming the DNS server is RFC Compliant

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2a04:ad80::/47

Announced by AS44684

Overview | Connectivity | Whois | DNS

Show Forward DNS

AAAA	DNS
2a04:ad80::10b8:b5b6	isolation.thordendal.ru, thordendal.ru, 410.thordendal.ru
2a04:ad80::53d0:59a0	l02a.customhost.org.uk
2a04:ad80::8613:e3c2	l02a.shelladdress.co.uk
2a04:ad80::d51e:7035	nether.juzam.net
2a04:ad80:0:ce::7295	bh00051.vs.mythic-beasts.com
2a04:ad80:0:114::e2b7	cloudy.sh
2a04:ad80:0:182::8d3e	dungeons.sh, transylvanian.recipes
2a04:ad80:1:6e::1	mastergen.com, dev.mastergen.com, www.mastergen.com (4 more...)
2a04:ad80:1:79::d547	joseph.walton-rivers.uk, walton-rivers.uk
2a04:ad80:1:8b::1	grothendieck.bio, ecosocial.space, tsmithe.net, loby.life (6 more...)

We can also show you what DNS points *to* that prefix*

* Assuming it has issued a SSL cert

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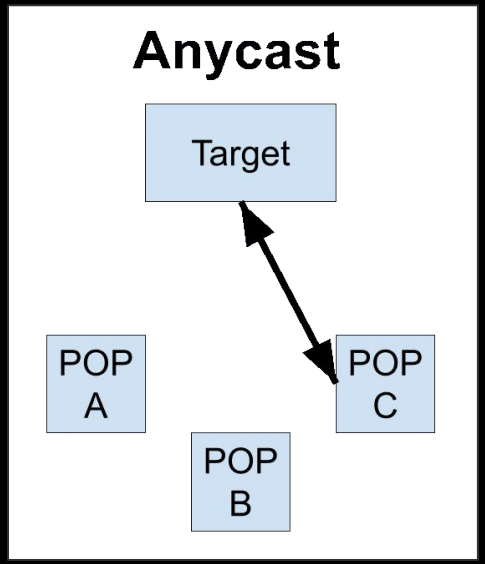
Anycast Detection

	Prefix	Description
Anycast Detected	8.8.4.0/24	Google LLC
	8.8.8.0/24	Google LLC

Anycast Detection

Prefix	Description
8.8.4.0/24	Google LLC
8.8.8.0/24	Google LLC

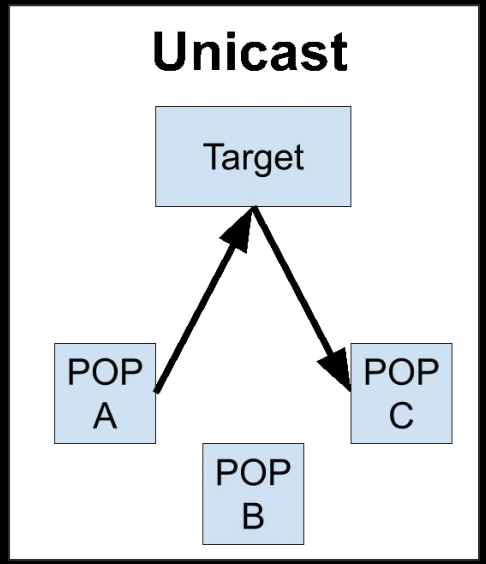
Anycast Detected



Using a anycast prefix we can detect the existence of other anycast prefixes. This scan is done about once every 48 hours and displayed directly on the site

Historical data can be found at:

https://github.com/bgptools/anycast-prefixes



API… ish?

- Similar whois+bulk mode server to Team Cymru's

```
[16:56:34] ben@metropolis:~$ whois 185.230.223.69 -h bgp.tools
AS      | IP               | BGP Prefix          | CC | Registry | Allocated  | AS Name
206924  | 185.230.223.69   | 185.230.223.0/24    | GB | RIPE     | 2022-06-21 | Ben Cartwright-Cox
```

- table.txt / table.jsonl for full table <-> ASN mapping
- asns.csv for ASN -> Name mappings
- Dumping of network tag members
- Gopher (yes, really) support if you *really* hate yourself

https://bgp.tools/kb/api

How hard can it be?

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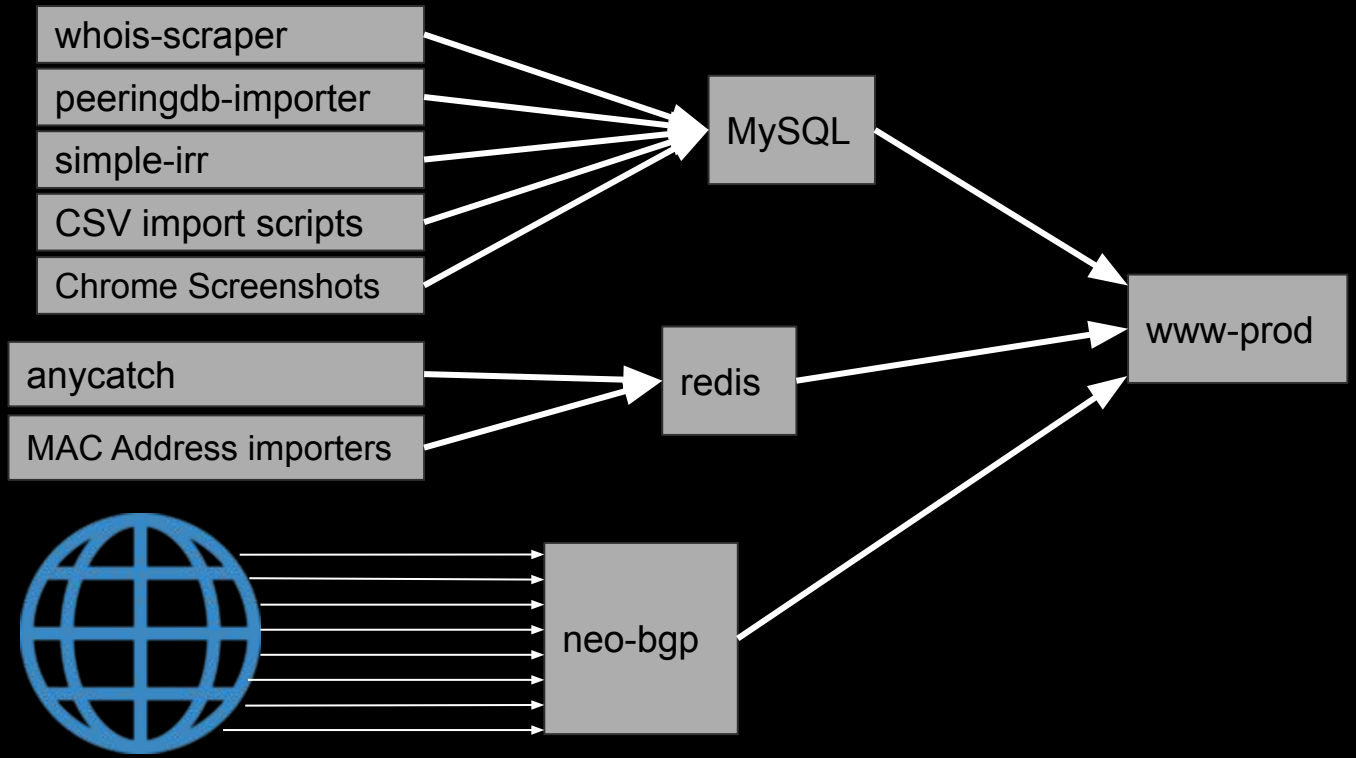
General Data Flows of bgp.tools



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This way, the core remarkably cheap to run

- MySQL runs at ~13G of storage
- Redis sits at 3G of RAM (post all imports)
- The hilbert map data is 4GB since 2^32 bytes = IP addresses
- The rDNS data lands in at 8GB of gzipped files (Custom DNS database format for speed and ease of update)
- The fDNS data lands in at 26GB (uncompressed)

Overall less than 64G of storage really needed, except the data has heavy churn so SSD writes can get a little *spicy*!

p99 page build and render is 200ms, p50 is 5ms

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The hardest feature of bgp.tools

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AS20940 Akamai Internation

bgp.tools/as/20940

bgp.tools

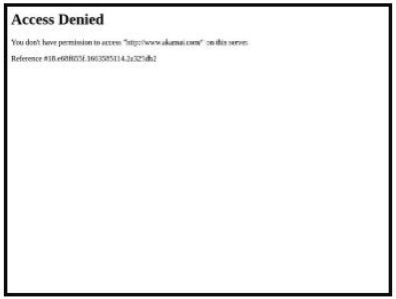
Start here...

AS206924

View | Edit

Akamai International B.V.

AS Number **20940**
Website **https://www.akamai.com/**



Overview | Prefixes | Connectivity | Whois | IX

Registered on
29 Aug 2002 (20 years old)

Network status
Active, Allocated under RIPE

Network type
Content

Prefixes Announced
4073 IPv4, 746 IPv6

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```
aut-num:        AS206924
as-name:        BENJOJONET
org:            ORG-BC129-RIPE
…
mnt-by:         BENJOJO
created:        2017-04-11T09:47:42Z
last-modified:  2020-12-29T17:28:18Z
source:         RIPE
sponsoring-org: ORG-JS121-RIPE
…

organisation:   ORG-BC129-RIPE
org-name:       Ben Cartwright-Cox
org-type:       OTHER
address:        Dummy address for ORG-BC129-RIPE
e-mail:         unread@ripe.net
abuse-c:        ACRO5162-RIPE
mnt-ref:        BENJOJO
mnt-by:         BENJOJO
created:        2017-03-12T18:51:12Z
last-modified:  2019-05-11T14:25:32Z
source:         RIPE
remarks:        ****************************
remarks:        * THIS OBJECT IS MODIFIED
```

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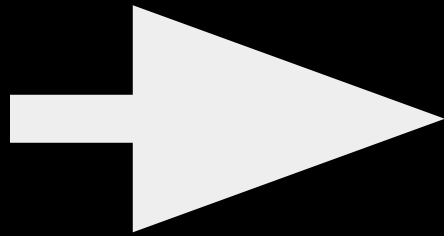
```
aut-num:        AS138211
as-name:        MOEQING-AS-AP
descr:          MoeQing Network Service
country:        CN
org:            ORG-VL5-AP
admin-c:        YH2770-AP
tech-c:         YH2770-AP
abuse-c:        AM2427-AP
mnt-lower:      MAINT-VMHAUSLIMITED-AP
mnt-routes:     MAINT-VMHAUSLIMITED-AP
mnt-by:         APNIC-HM
mnt-irt:        IRT-MoeQing
last-modified:  2020-05-28T14:00:30Z
source:         APNIC
```

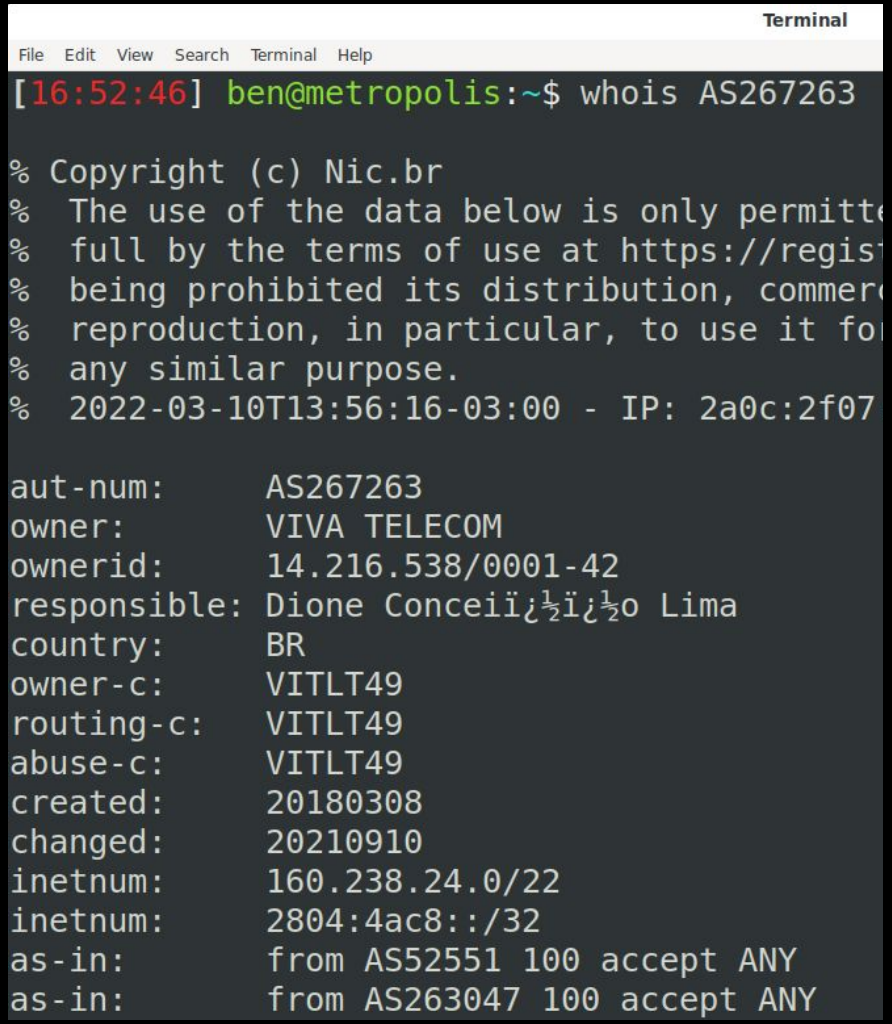


MoeQing Network Service

AS Number **138211**
Website **https://as138211.bgp.world/**

Overview | Prefixes | Connectivity | Whois | IX

```
organisation:   ORG-VL5-AP
org-name:       VMHaus Limited
country:        GB
address:        PO BOX 1363 45 Argyle Street
address:        Cambridge
phone:          +447378301289
e-mail:         ********
mnt-ref:        APNIC-HM
mnt-by:         APNIC-HM
last-modified:  2019-08-27T12:56:33Z
source:         APNIC
```




```
[ JPNIC database provides information regarding IP address a
[ is restricted to network administration purposes. For furt
[ use 'whois -h whois.nic.ad.jp help'. To only display Engli
[ add '/e' at the end of command, e.g. 'whois -h whois.nic.a

Network Information:
[Network Number]                210.235.64.0/18
[Network Name]
[Organization]                  KDDI CORPORATION
[Administrative Contact]        JP00000181
[Technical Contact]             JP00000181
[Abuse]                         abuse@dion.ne.jp
[Allocated Date]                2003/02/05
[Last Update]                   2009/09/07 11:32:34(JST)

Less Specific Info.
----------
No match!!

More Specific Info.
----------
No match!!
```

Falsehoods programmers believe about Whois

- There is a single name a prefix / aut-num can have
- There is any name at all a prefix / aut-num could have
- That the whois server has a single language (KRNIC)
- That the whois is transmitted in something UTF-8 ish
- That the data given back to you by a RIR's whois server is UTF-8 compliant (LACNIC)
- That the whois server is constantly online
- That the whois server will respond correctly when it is online

- That there is whois at all
- That RDAP solves all of these issues

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There is a CSV dump so you don't have to suffer

Terminal

File Edit View Search Terminal Help

```
[17:15:02] ben@metropolis:~$ curl -H 'User-Agent: UKNOF' -s https://bgp.tools/asns.csv | head -n 15
asn,name
AS1,"Level 3 Parent, LLC"
AS10,CSNET Coordination and Information Center
AS100,FMC Central Engineering Laboratories
AS1000,Internet Tool & Die Company
AS10000,Nagasaki Cable Media Inc.
AS10001,Mics Network Corporation
AS10002,"IGAUENO CABLE TELEVISION CO.,LTD"
AS10003,"Ogaki Cable Television Co.,Inc."
AS10004,JIN Office Service Inc.
AS10006,"SECOM Trust Systems Co.,Ltd."
AS1001,Academy City Internet LLC
AS10010,TOKAI Communications Corporation
AS10011,advanscope inc.
AS10012,"Rakuten Mobile, Inc."
[17:15:13] ben@metropolis:~$
```

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The second hardest feature of bgp.tools

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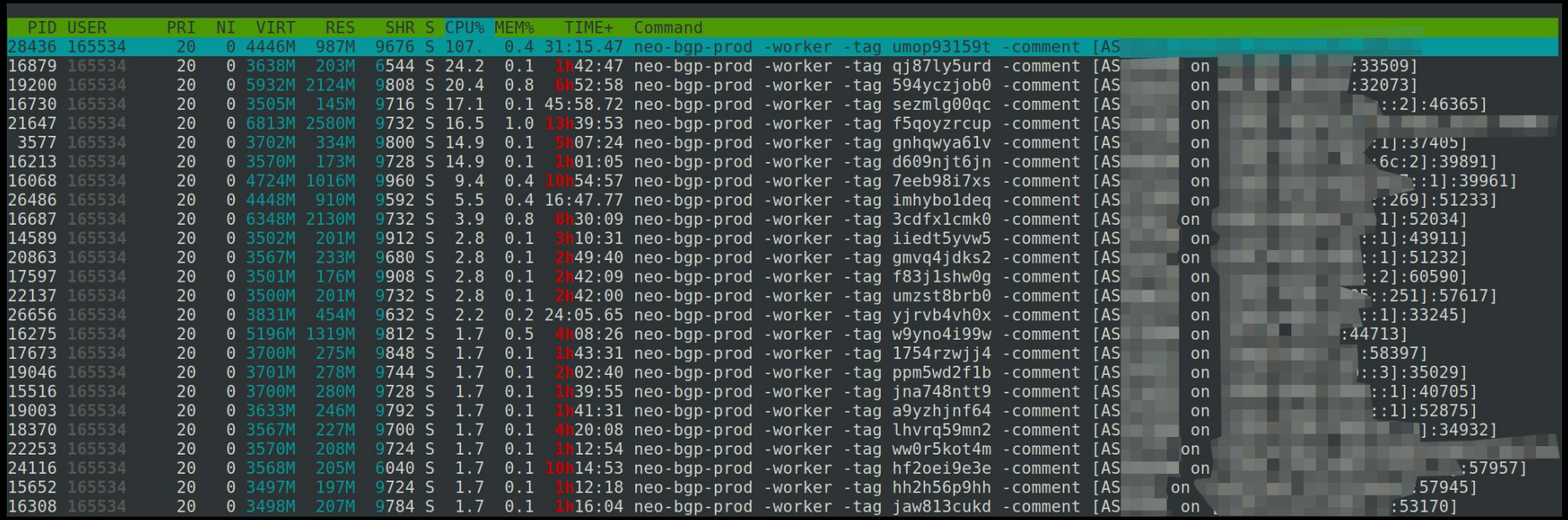
Standard Data Sources for these kinds of sites

I built my own BGP collector

A New BGP daemon for a new use case



```
  PID USER      PRI  NI  VIRT   RES   SHR S CPU% MEM%   TIME+  Command
28436 165534     20   0 4446M  987M  9676 S 107.  0.4 31:15.47 neo-bgp-prod -worker -tag umop93159t -comment [AS
16879 165534     20   0 3638M  203M  6544 S 24.2  0.1  1h42:47 neo-bgp-prod -worker -tag qj87ly5urd -comment [AS        on                  :33509]
19200 165534     20   0 5932M 2124M  9808 S 20.4  0.8  6h52:58 neo-bgp-prod -worker -tag 594yczjob0 -comment [AS        on                  :32073]
16730 165534     20   0 3505M  145M  9716 S 17.1  0.1 45:58.72 neo-bgp-prod -worker -tag sezmlg00qc -comment [AS        on                    ::2]:46365]
21647 165534     20   0 6813M 2580M  9732 S 16.5  1.0 13h39:53 neo-bgp-prod -worker -tag f5qoyzrcup -comment [AS        on
 3577 165534     20   0 3702M  334M  9800 S 14.9  0.1  5h07:24 neo-bgp-prod -worker -tag gnhqwya61v -comment [AS        on                     :1]:37405]
16213 165534     20   0 3570M  173M  9728 S 14.9  0.1  1h01:05 neo-bgp-prod -worker -tag d609njt6jn -comment [AS        on                   6c:2]:39891]
16068 165534     20   0 4724M 1016M  9960 S  9.4  0.4 10h54:57 neo-bgp-prod -worker -tag 7eeb98i7xs -comment [AS        on                     ::1]:39961]
26486 165534     20   0 4448M  910M  9592 S  5.5  0.4 16:47.77 neo-bgp-prod -worker -tag imhybo1deq -comment [AS        on                    ::269]:51233]
16687 165534     20   0 6348M 2130M  9732 S  3.9  0.8  8h30:09 neo-bgp-prod -worker -tag 3cdfx1cmk0 -comment [AS      on                      1]:52034]
14589 165534     20   0 3502M  201M  9912 S  2.8  0.1  3h10:31 neo-bgp-prod -worker -tag iiedt5yvw5 -comment [AS        on                   ::1]:43911]
20863 165534     20   0 3567M  233M  9680 S  2.8  0.1  2h49:40 neo-bgp-prod -worker -tag gmvq4jdks2 -comment [AS      on                     ::1]:51232]
17597 165534     20   0 3501M  176M  9908 S  2.8  0.1  2h42:09 neo-bgp-prod -worker -tag f83j1shw0g -comment [AS        on                     ::2]:60590]
22137 165534     20   0 3500M  201M  9732 S  2.8  0.1  2h42:00 neo-bgp-prod -worker -tag umzst8brb0 -comment [AS        on                  5::251]:57617]
26656 165534     20   0 3831M  454M  9632 S  2.2  0.2 24:05.65 neo-bgp-prod -worker -tag yjrvb4vh0x -comment [AS        on                     ::1]:33245]
16275 165534     20   0 5196M 1319M  9812 S  1.7  0.5  4h08:26 neo-bgp-prod -worker -tag w9yno4i99w -comment [AS        on                   :44713]
17673 165534     20   0 3700M  275M  9848 S  1.7  0.1  1h43:31 neo-bgp-prod -worker -tag 1754rzwjj4 -comment [AS        on                    :58397]
19046 165534     20   0 3701M  278M  9744 S  1.7  0.1  2h02:40 neo-bgp-prod -worker -tag ppm5wd2f1b -comment [AS        on                    ::3]:35029]
15516 165534     20   0 3700M  280M  9728 S  1.7  0.1  1h39:55 neo-bgp-prod -worker -tag jna748ntt9 -comment [AS        on                    ::1]:40705]
19003 165534     20   0 3633M  246M  9792 S  1.7  0.1  1h41:31 neo-bgp-prod -worker -tag a9yzhjnf64 -comment [AS        on                    ::1]:52875]
18370 165534     20   0 3567M  227M  9700 S  1.7  0.1  4h20:08 neo-bgp-prod -worker -tag lhvrq59mn2 -comment [AS        on                       ]:34932]
22253 165534     20   0 3570M  208M  9724 S  1.7  0.1  1h12:54 neo-bgp-prod -worker -tag ww0r5kot4m -comment [AS      on
24116 165534     20   0 3568M  205M  6040 S  1.7  0.1 10h14:53 neo-bgp-prod -worker -tag hf2oei9e3e -comment [AS        on                        :57957]
15652 165534     20   0 3497M  197M  9724 S  1.7  0.1  1h12:18 neo-bgp-prod -worker -tag hh2h56p9hh -comment [AS      on                      .57945]
16308 165534     20   0 3498M  207M  9784 S  1.7  0.1  1h16:04 neo-bgp-prod -worker -tag jaw813cukd -comment [AS        on                    :53170]
```

It turns out if you don't need to converge routes writing a bgp demon can be easy, runs ~500 QPS

Falsehoods programmers believe about BGP

- Prefixes match against their whois records
- Prefixes match against their route/route6 objects
- Prefixes have any kind of functioning database entries at all
- Prefixes are only originated by one ASN
- Peers fall into a easy Upstream/Downstream/Peer classification
- Upstreams are easy to detect at all
- That there is only one AS_PATH per BGP UPDATE message
- That private ASNs don't plague the table from some sources (thanks Vultr)
- That stuck routes are possible to work around.

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2a0c:2f07:ac1::/48 - bgp.to

bgp.tools/prefix/2a0c:2f07:ac1::/48#connectivity

Update

bgp.tools

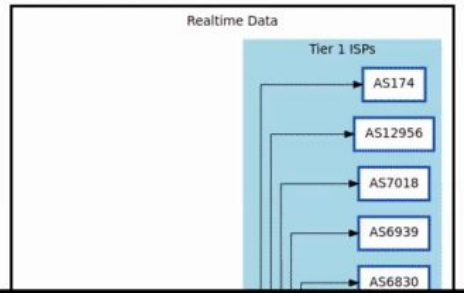
Start here...

View Edit

2a0c:2f07:ac1::/48

2a0c:2f07:... OBS 27.2.... CSSH [3] Terminal CGP - Mon... CSSH: root... CSSH: root... CSSH: root... redis-look... New Tab - ... benops - D... Terminal Terminal Terminal Terminal DBeaver 2... Terminal

Whois DNS Validation



16:53

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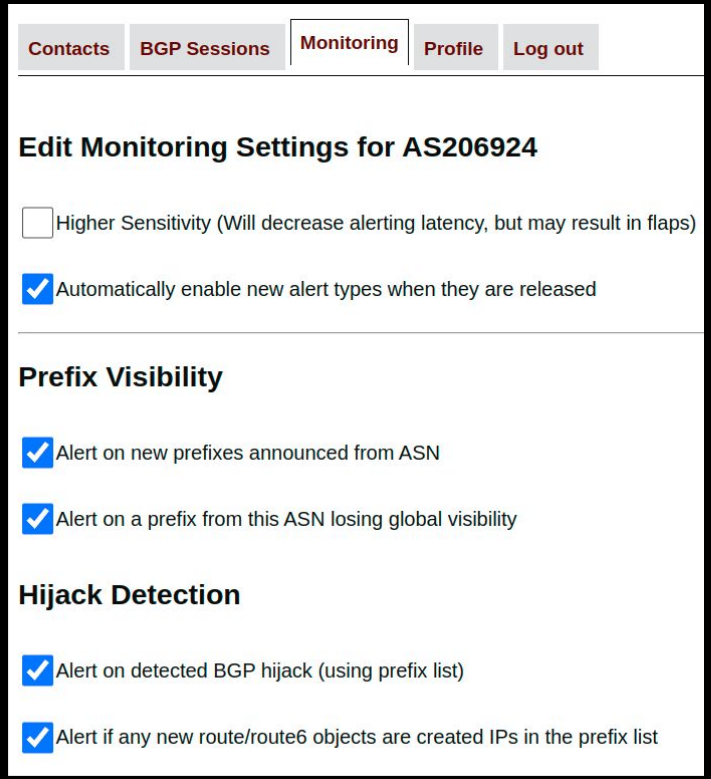
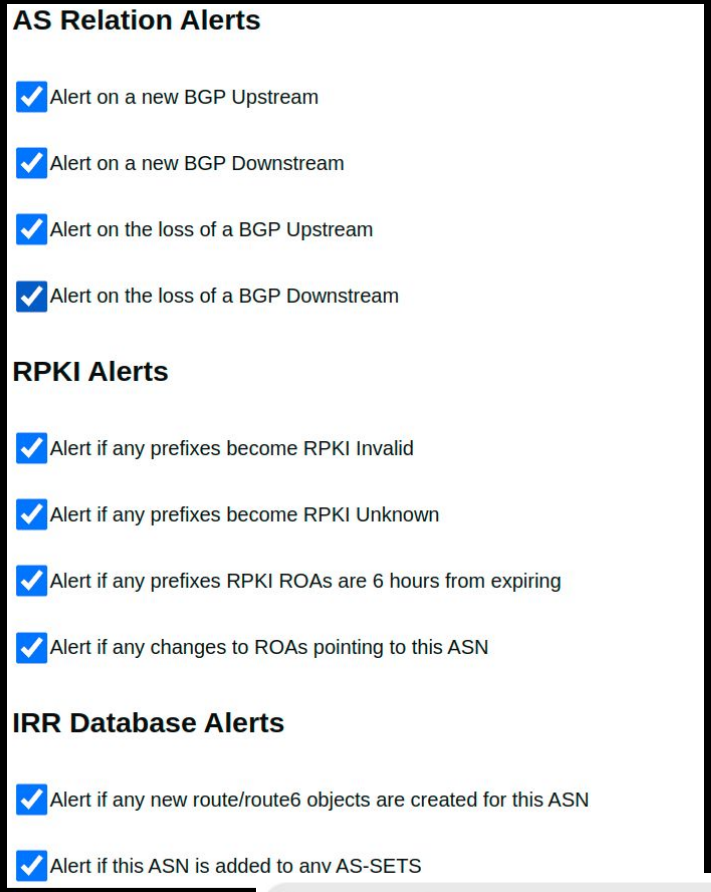
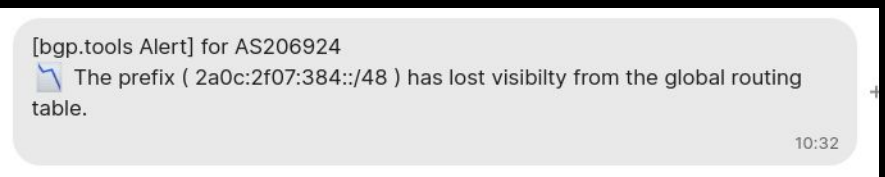
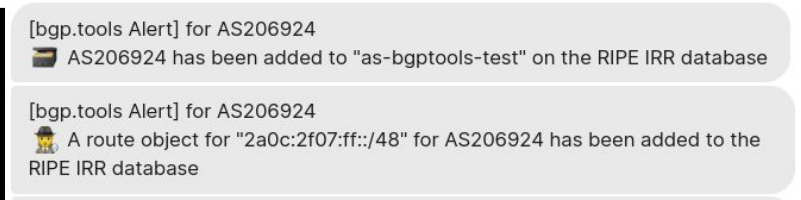

Contacts
BGP Sessions
Monitoring
Profile
Log out
Edit Monitoring Settings for AS206924
Higher Sensitivity (Will decrease alerting latency, but may result in flaps)
Automatically enable new alert types when they are released
Prefix Visibility
Alert on new prefixes announced from ASN
Alert on a prefix from this ASN losing global visibility
Hijack Detection
Alert on detected BGP hijack (using prefix list)
Alert if any new route/route6 objects are created IPs in the prefix list


AS Relation Alerts
Alert on a new BGP Upstream
Alert on a new BGP Downstream
Alert on the loss of a BGP Upstream
Alert on the loss of a BGP Downstream
RPKI Alerts
Alert if any prefixes become RPKI Invalid
Alert if any prefixes become RPKI Unknown
Alert if any prefixes RPKI ROAs are 6 hours from expiring
Alert if any changes to ROAs pointing to this ASN
IRR Database Alerts
Alert if any new route/route6 objects are created for this ASN
Alert if this ASN is added to anv AS-SETS


[bgp.tools Alert] for AS206924
The prefix (2a0c:2f07:384::/48) has lost visibilty from the global routing table.
10:32


[bgp.tools Alert] for AS206924
AS206924 has been added to "as-bgptools-test" on the RIPE IRR database
[bgp.tools Alert] for AS206924
A route object for "2a0c:2f07:ff::/48" for AS206924 has been added to the RIPE IRR database

2a00:1098::/32 - bgp.tools

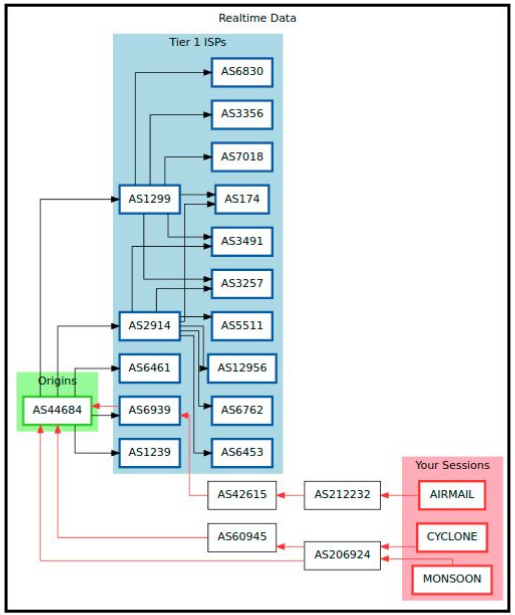
bgp.tools/prefix/2a00:1098::/32#connectivity

Incognito (2)

2a00:1098::/32

Announced by AS44684

Overview | Connectivity | Whois | DNS | Validation



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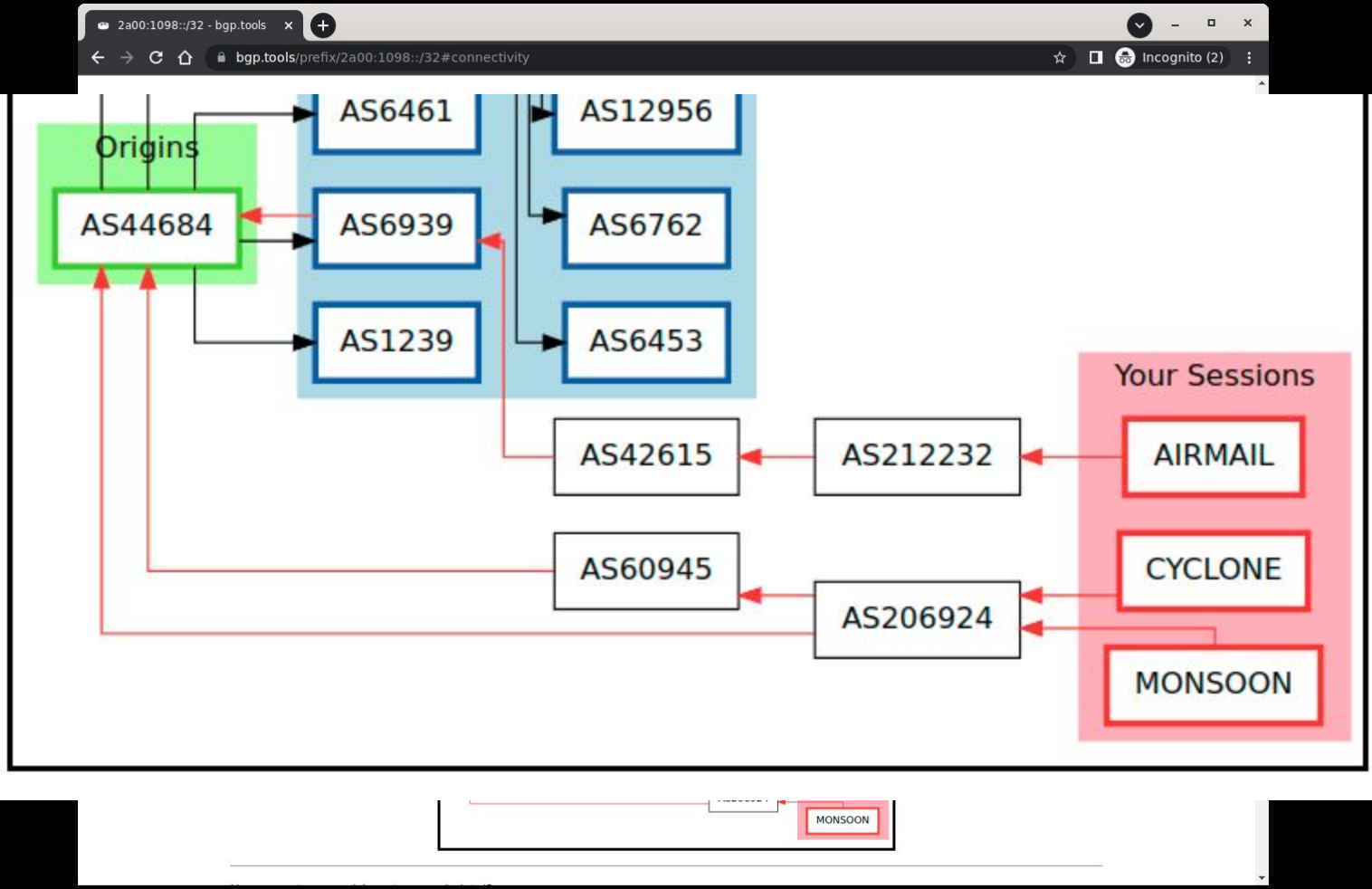
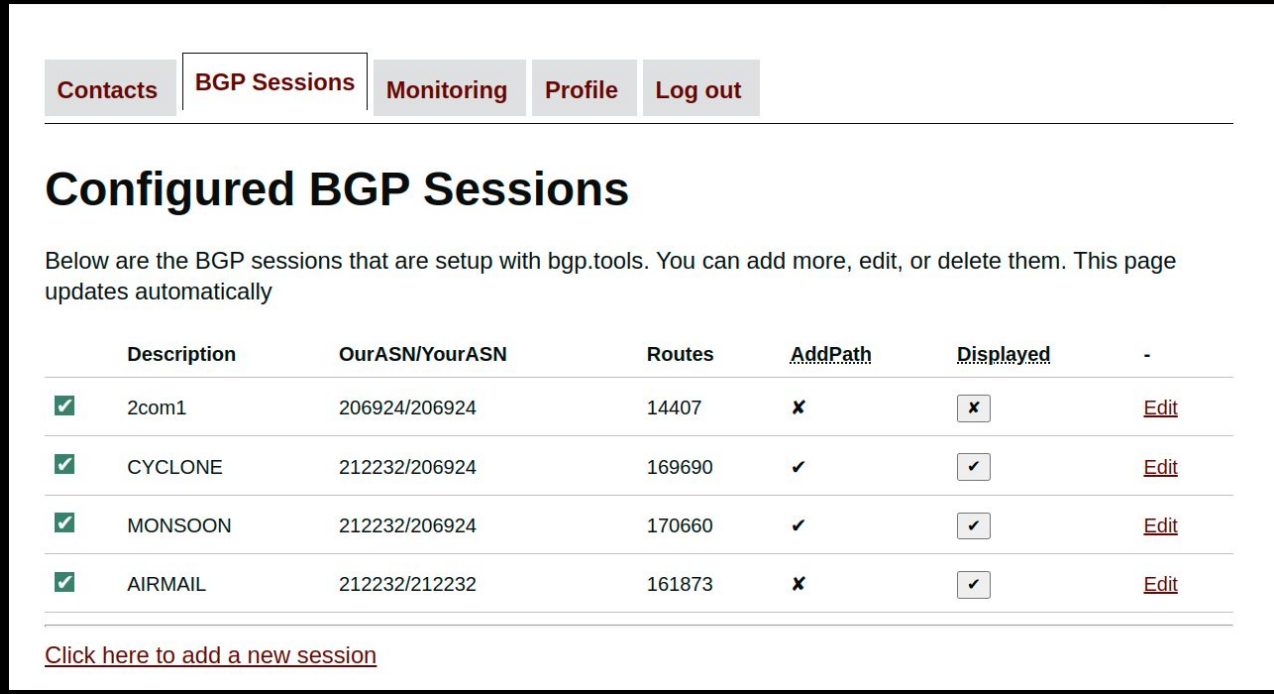


Frictionless and easy

- Login via PeeringDB, or sign up for a bgp.tools account
- We setup some kind of communication method (That includes more "exotic" stuff like Discord, Slack, Telegram, Signal, Webhooks)
- You can **instantly** create a new session and the backend and UI live updates to the status



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This is all you need

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, and Private ASN ranges

212232

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

206924

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 allow commercial products to use those MRT files

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

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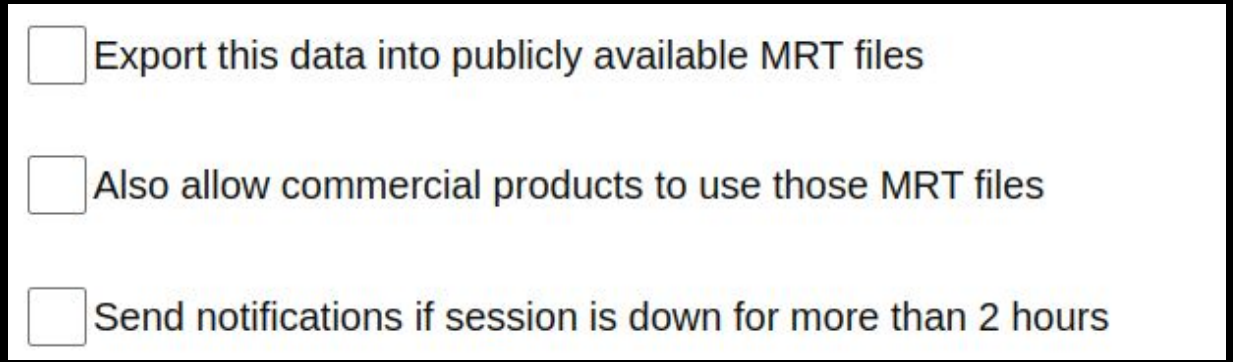
MRT Support will be offered soon

People can opt in to having their routes exported out into a large MRT file.

To deal with usage concerns, the files are split between profit allowed and non-profit uses.



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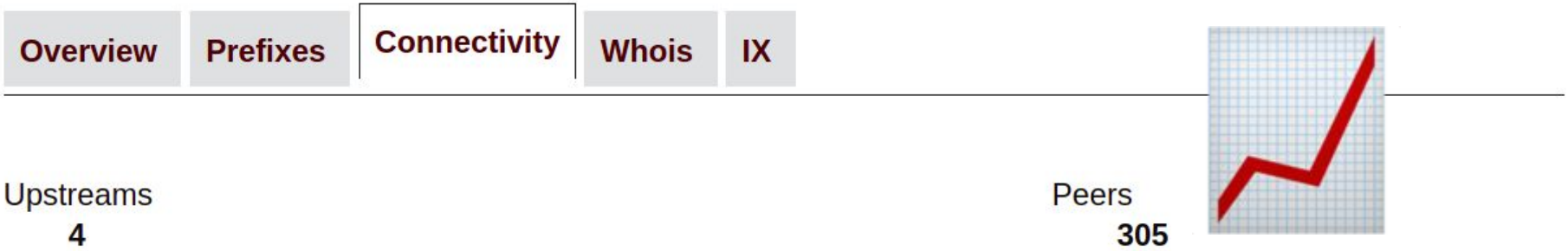
If you like this tool, Please setup BGP Collector sessions

- I'm in particular need for Orange (AS5511), Verizon (AS701(2,3)),
  DTAG (AS3320), Telefonica (AS12956), Sparkle (AS6762)
- However if you want better peering numbers, you should feed anyway



- This also will help the academic community get access to unique AS Path data!

Questions? / Requests?

Or admin@bgp.tools / ben@benjojo.co.uk

Or IRC on you-know-the-networks, and/or Discord

Longer term bgp.tools goals:

- Work with poorly covered networks/regions to start sessions with us
- Continue to build better debugging systems designed for real network engines to use, not marketing slides
- Historical data pull back
- **Talk to me in person for more plans!**

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