How bgproutes.io supports latest technologies such as RPKI ROV, ASPA, and BMP

Current sponsors:

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Joint work with:
Thomas Alfroy
Cristel Pelsser

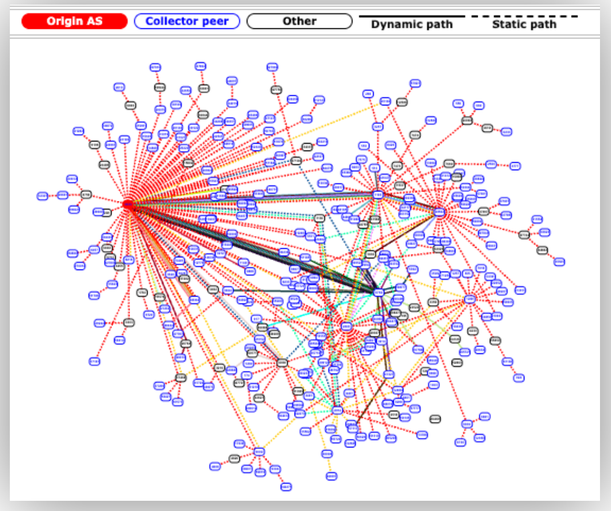
bgproutes.io

BGP data collected from real BGP routers is essential for understanding and monitoring Internet routing

arrangements between ASes.

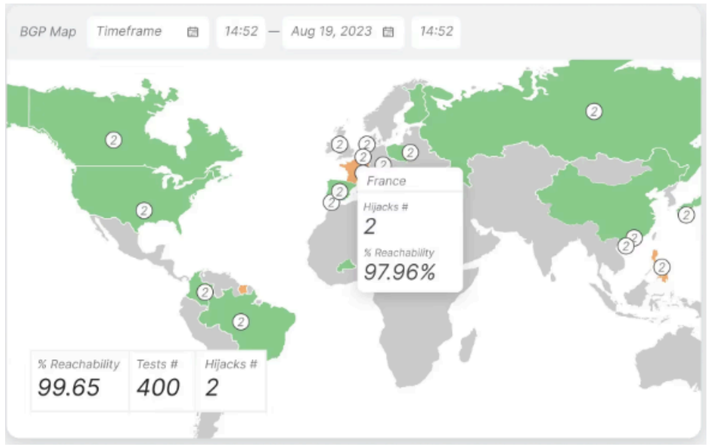
AS Rank ▲	AS Number ▽	Organization		cone size (ASes) ▽
1	3356	Level 3 Parent, LLC		53982
2	1299	Arelion Sweden AB		41919
3	174	Cogent Communications		37559
4	3257	GTT Communications Inc.		36334
5	2914	NTT America, Inc.		26976
6	6939	Hurricane Electric LLC		21697
7	6762	Telecom Italia S.p.A.		20271
8	6453	TATA COMMUNICATIONS (AMERICA) INC		19334
9	6461	Zayo Bandwidth		18116
10	3491	PCCW Global, Inc.		11530

CAIDA's AS rank



BGPlay

RIPEStat



Catchpoint's BGP map

The three longstanding platforms that collect, archive, and publicly share BGP data are RIPE RIS, RouteViews and PCH

- RIS and RouteViews collect and store data from ~1500 BGP routers (*a.k.a.* "*vantage points*")

bgproutes.io

Our new next-gen BGP route collection platform

https://bgproutes.io

You can contribute data

bgproutes.io

Our new next-gen BGP route collection platform

We launched it
1.5 years ago

https://bgproutes.io

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BGP data collection platforms typically pursue two main objectives

High coverage	Perpetual data retention

BGP data collection platforms typically pursue two main objectives **that are not easily compatible**

Priority	
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bgproutes.io

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- New strategies for high coverage (e.g., BMP)

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bgproutes.io relies on three ingredients to increase its coverage

Ingredient #1

Ingredient #2

Ingredient #3

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Ingredient #3 |

bgproutes.io simplifies, automates
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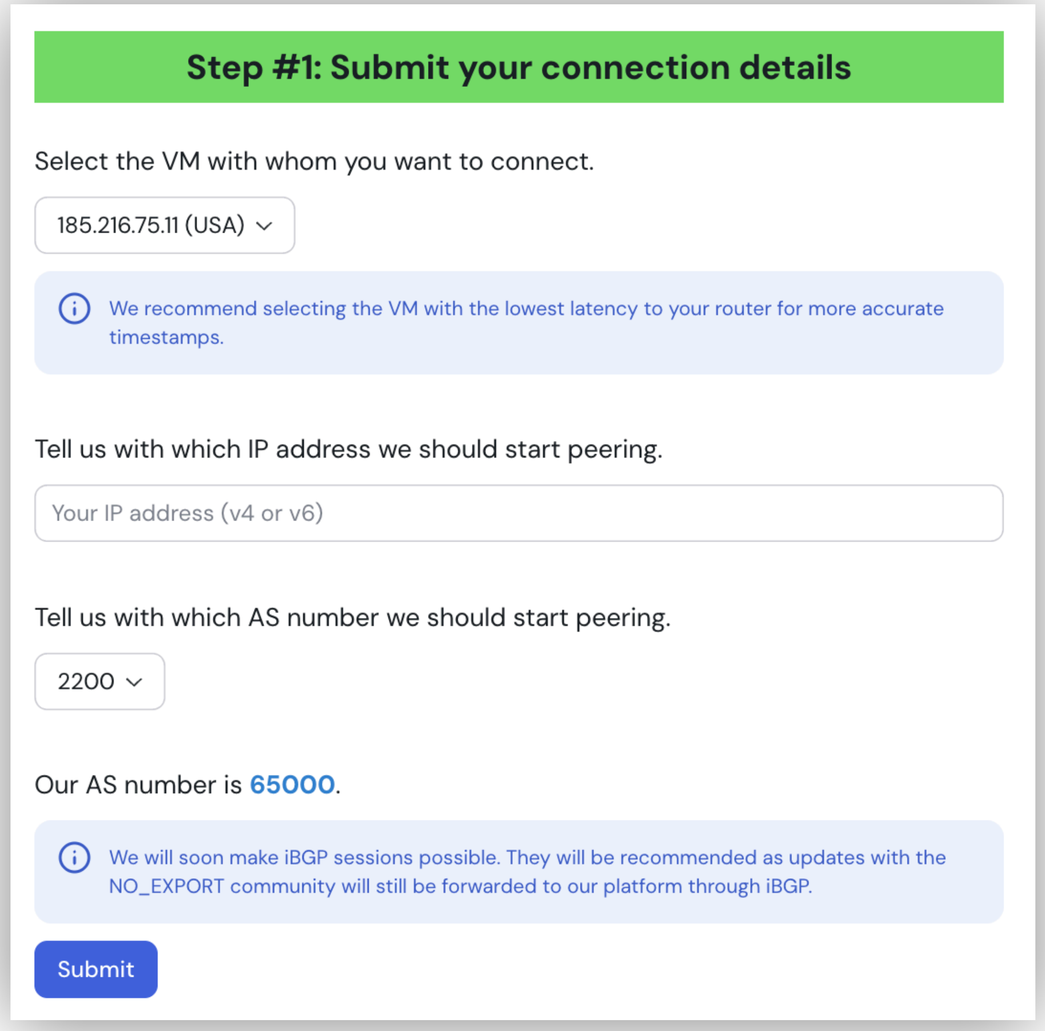
Network operators can authenticate using PeeringDB

Network operators just have to fill a form to start peering with bgproutes.io



bgproutes.io/contribute

Today, **bgproutes.io** collects BGP data from ~100 networks

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This is useful, but far from sufficient for accurate monitoring

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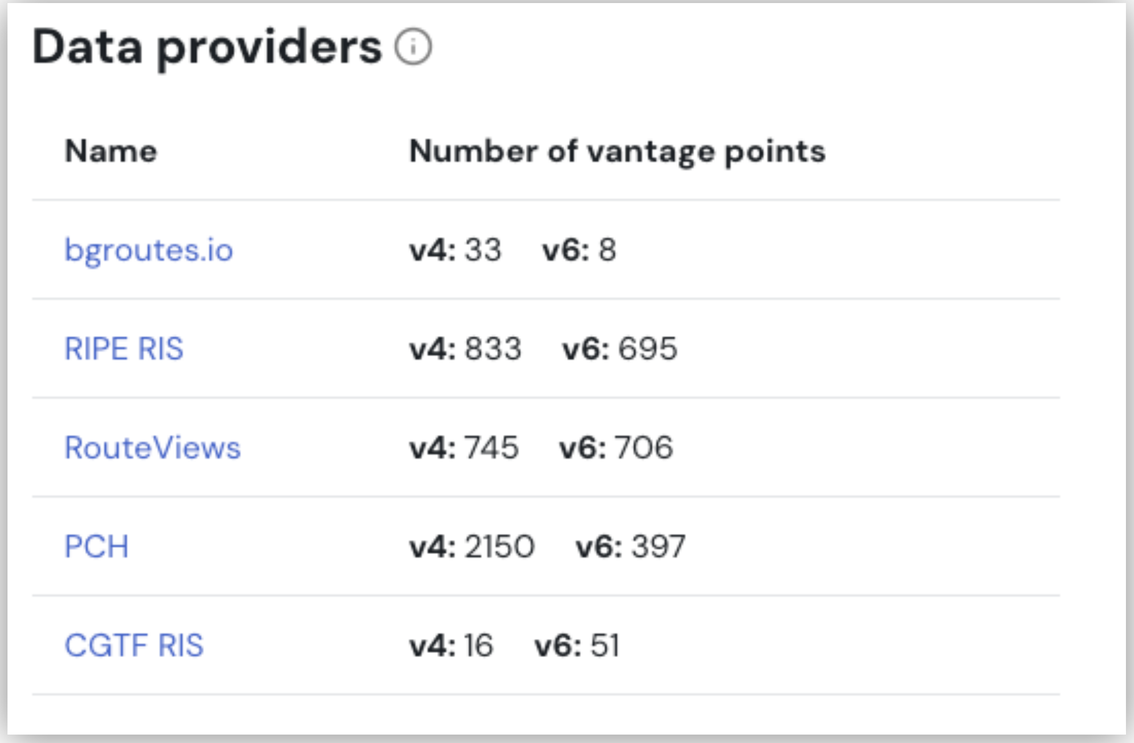
bgproutes.io increases coverage by centralising all the data collected by RIPE RIS, RouteViews, PCH, CGTF into a single database

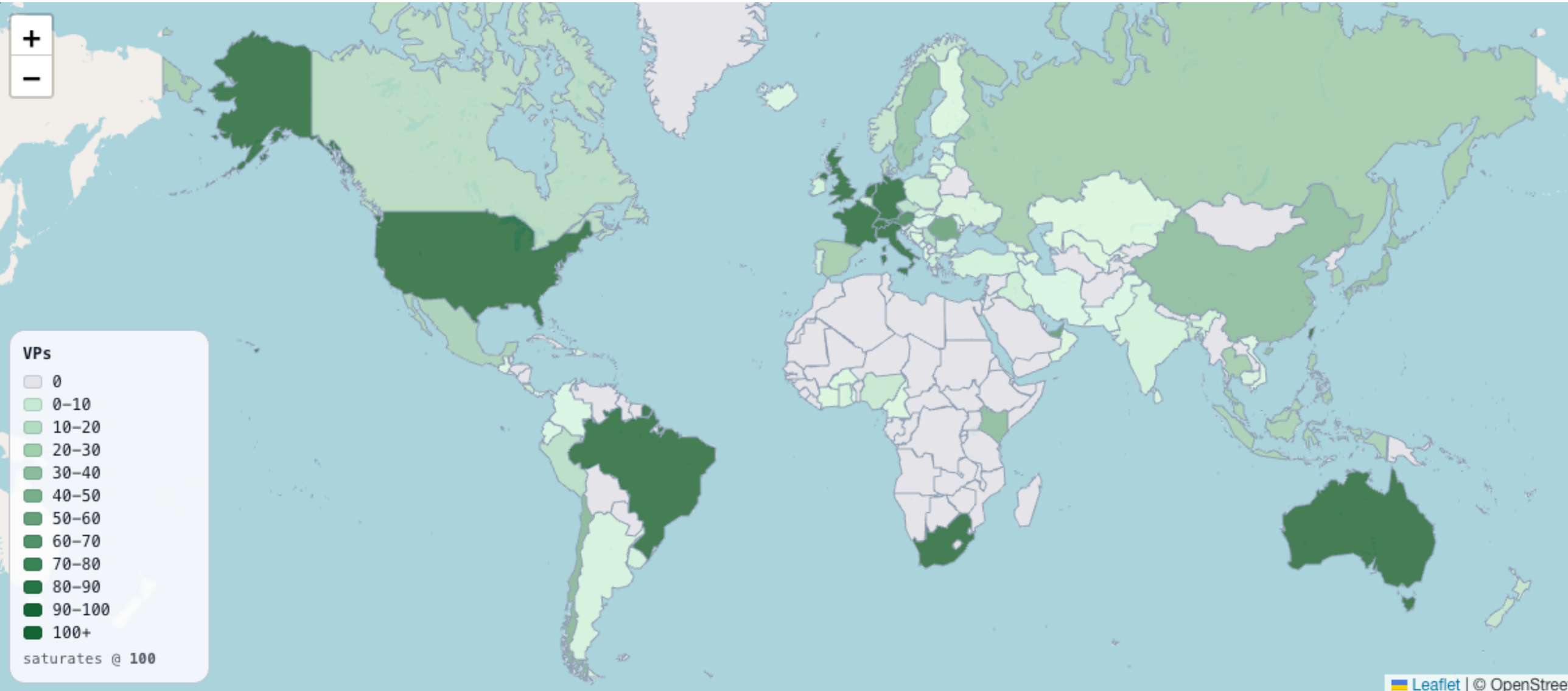


Data providers

Name	Number of vantage points
bgroutes.io	**v4:** 33 **v6:** 8
RIPE RIS	**v4:** 833 **v6:** 695
RouteViews	**v4:** 745 **v6:** 706
PCH	**v4:** 2150 **v6:** 397
CGTF RIS	**v4:** 16 **v6:** 51

https://vp-explorer.bgproutes.io

bgproutes.io already stores data
for more than 5000 vantage points



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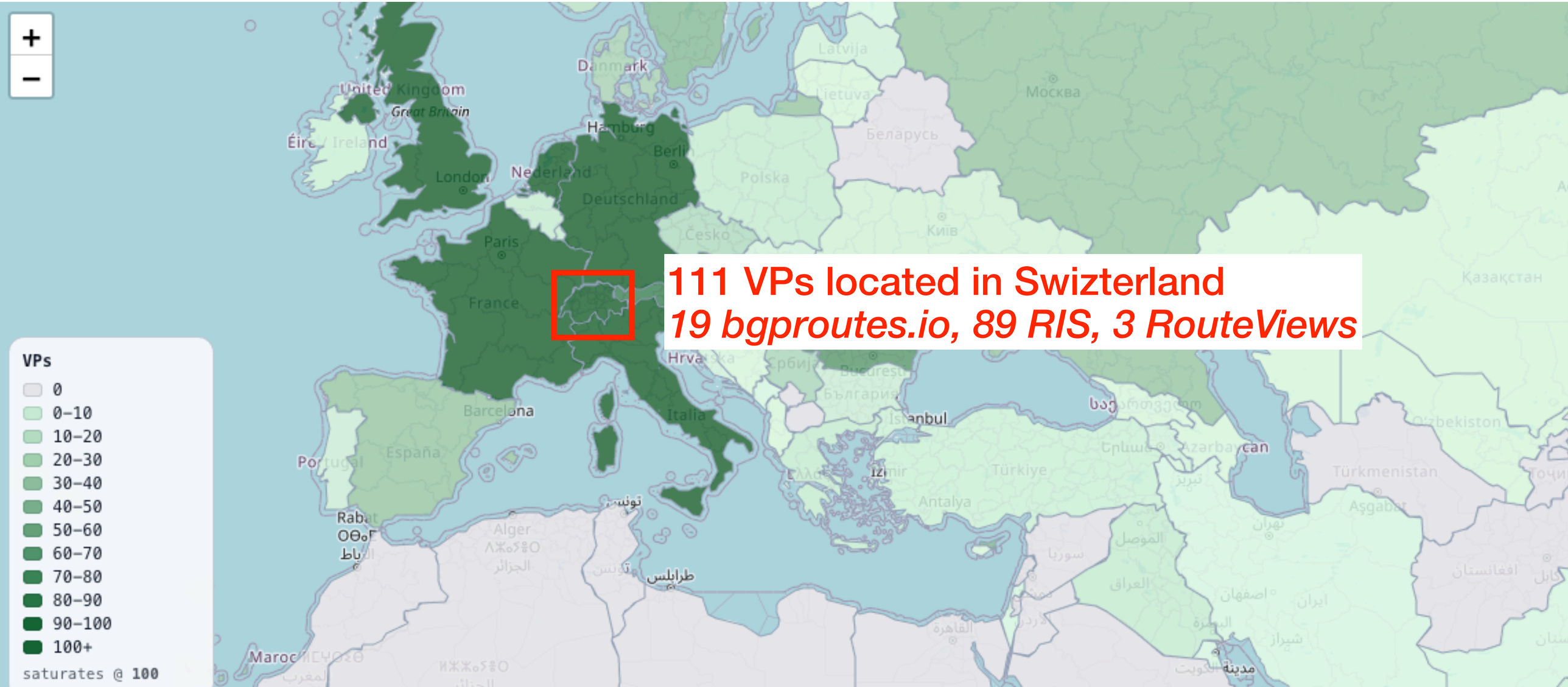

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Ingredient #1 — Automated peering establishment

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Ingredient #3 — **BMP**

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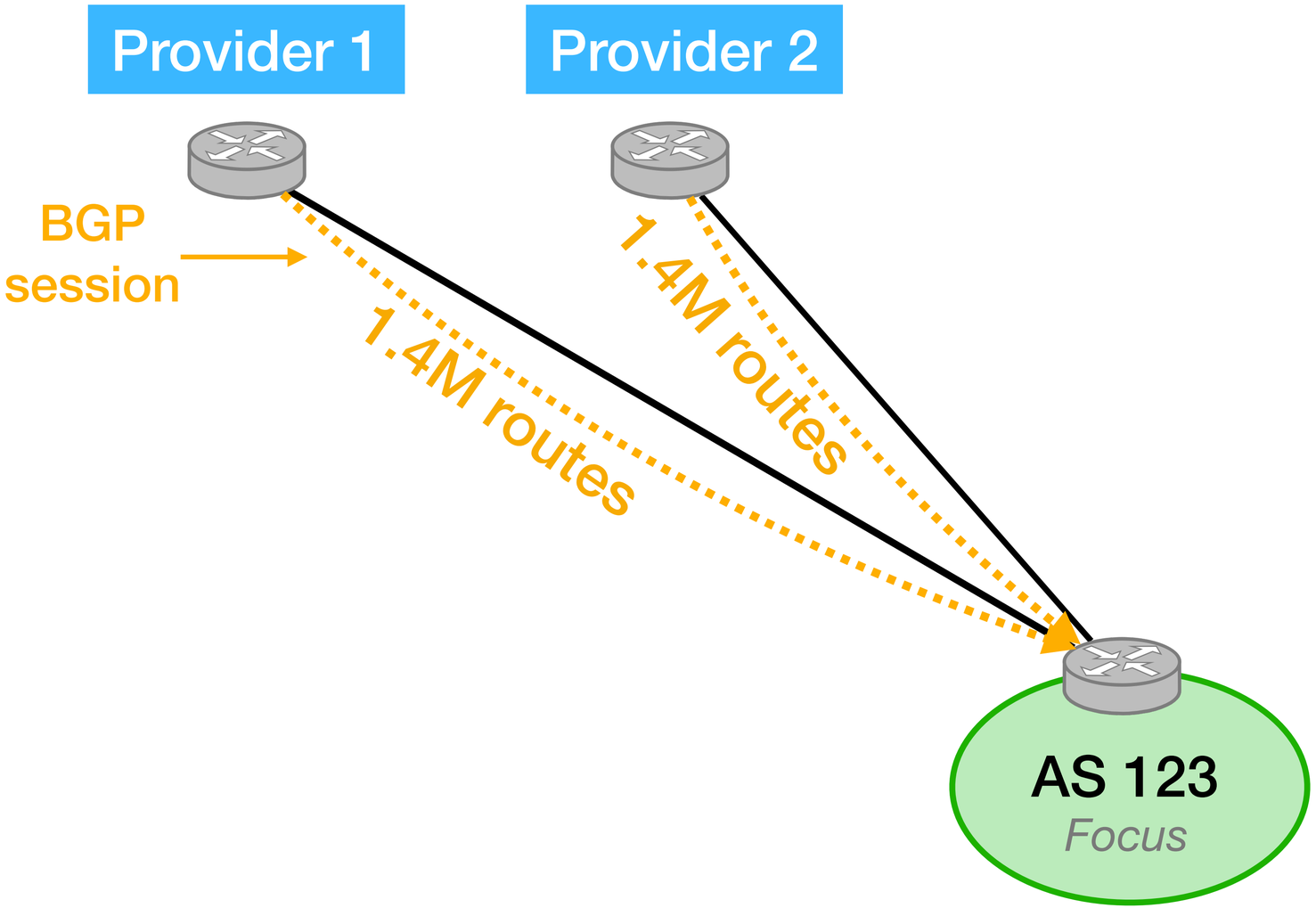

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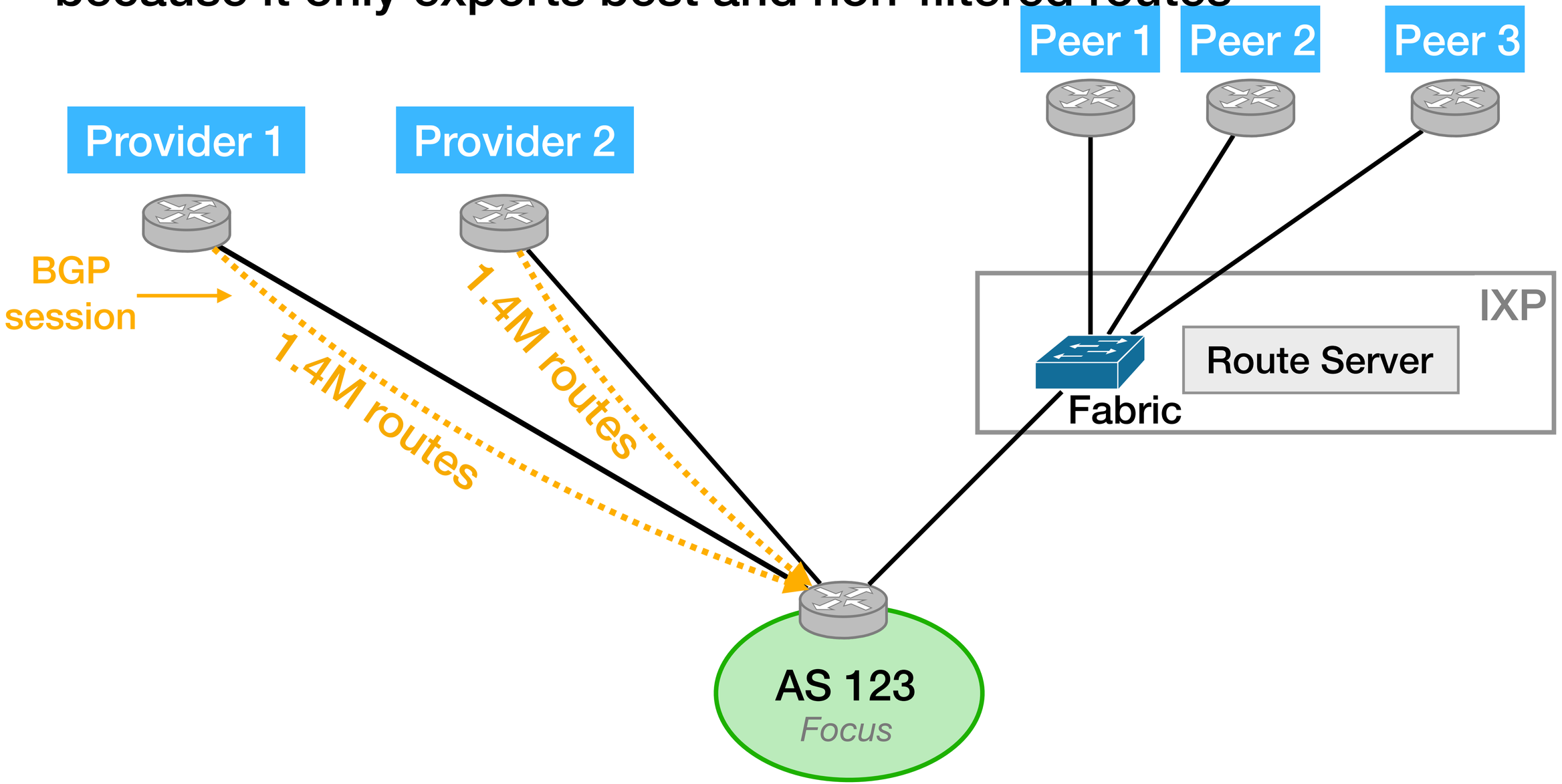

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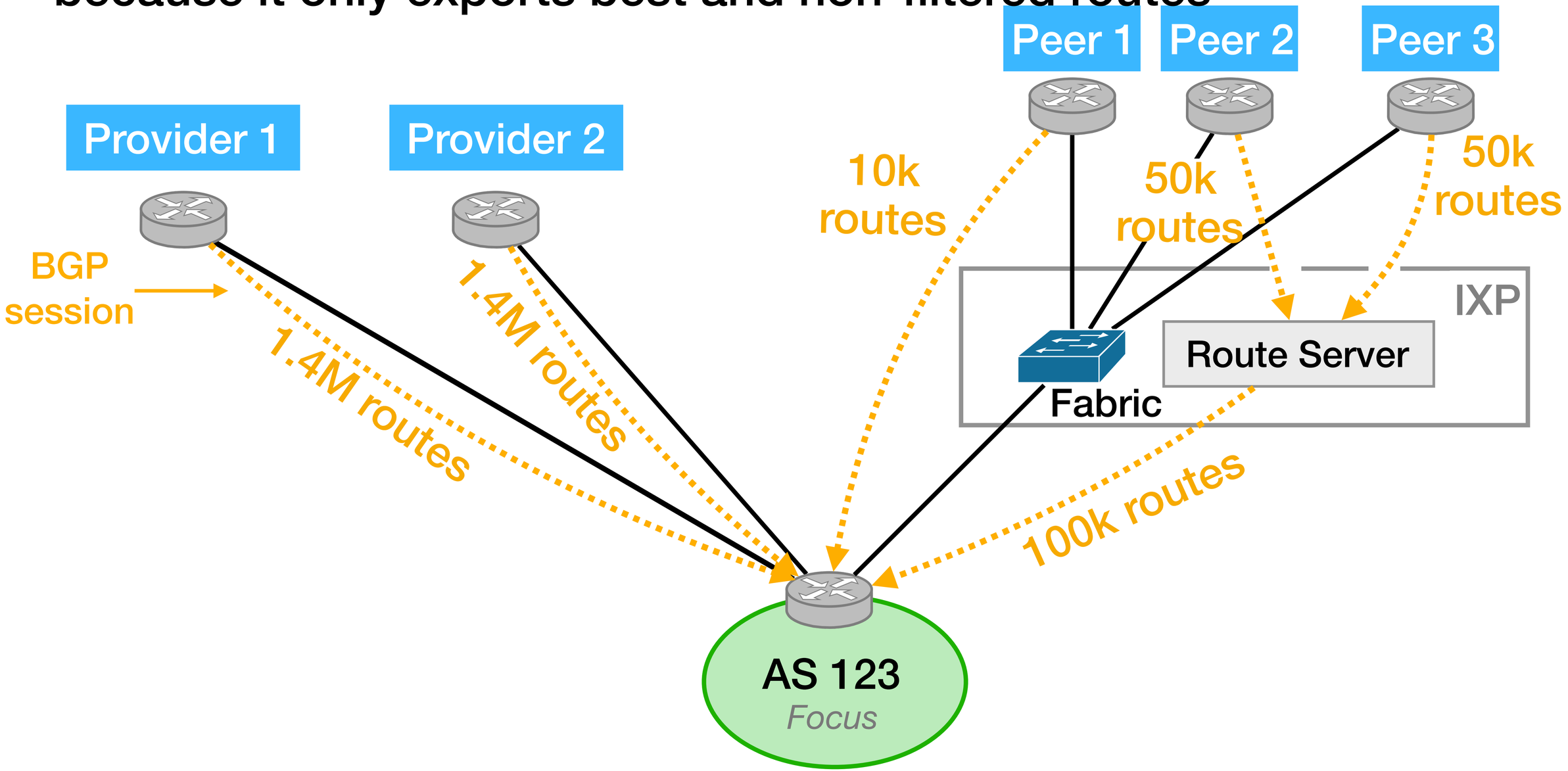

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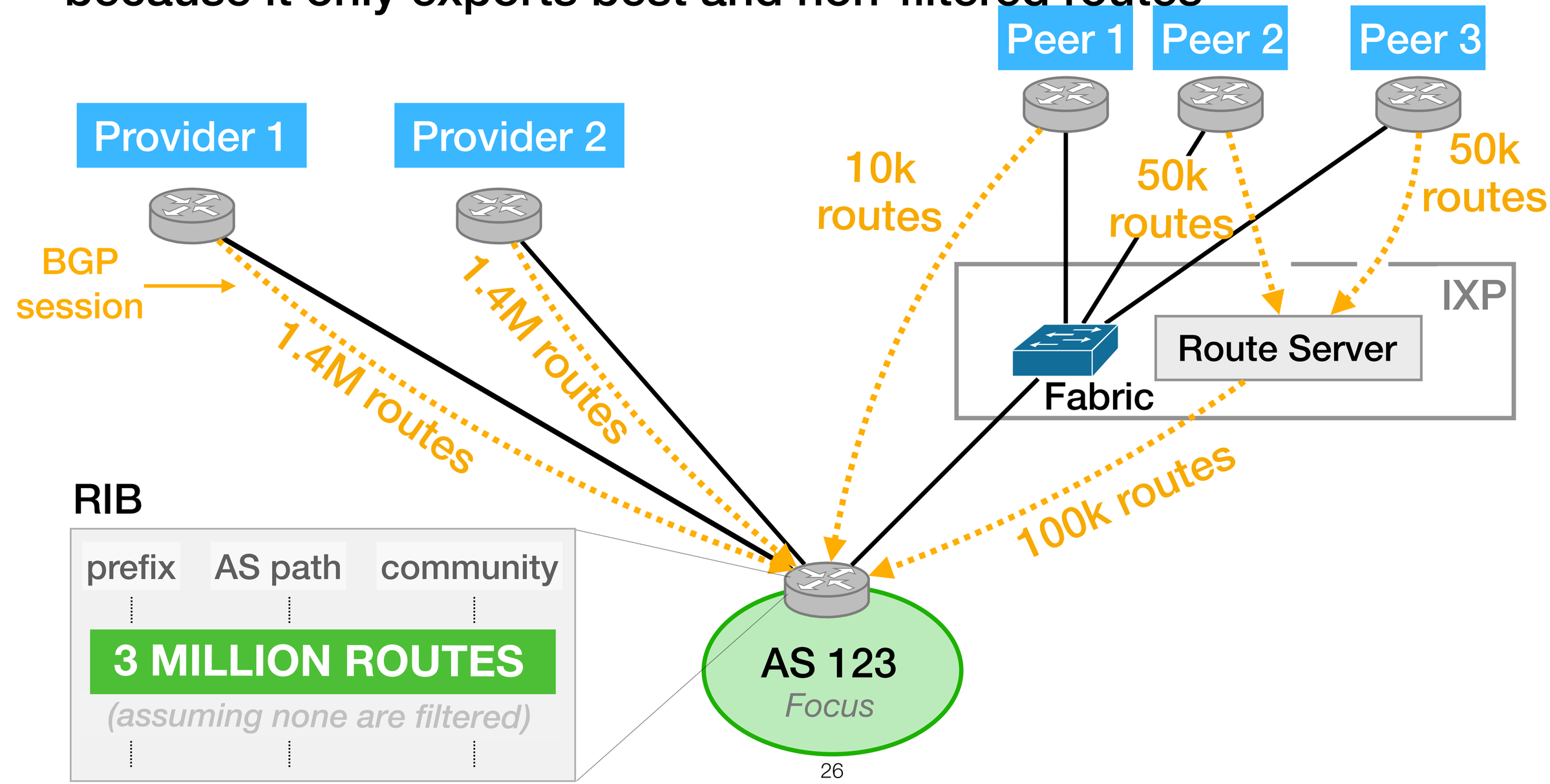

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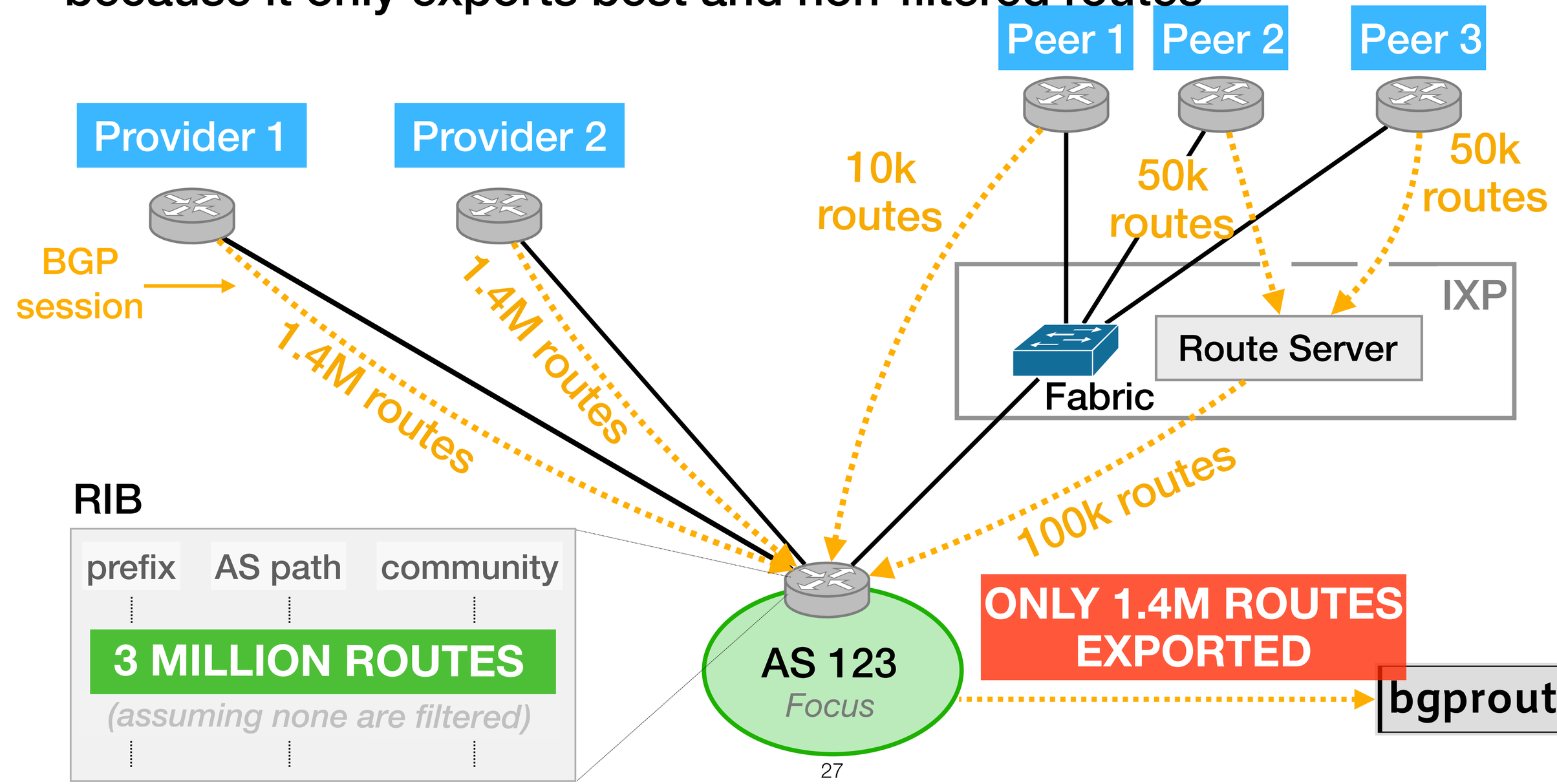

The iceberg analogy works well here

Routes collected from BGP sessions are the top of the iceberg

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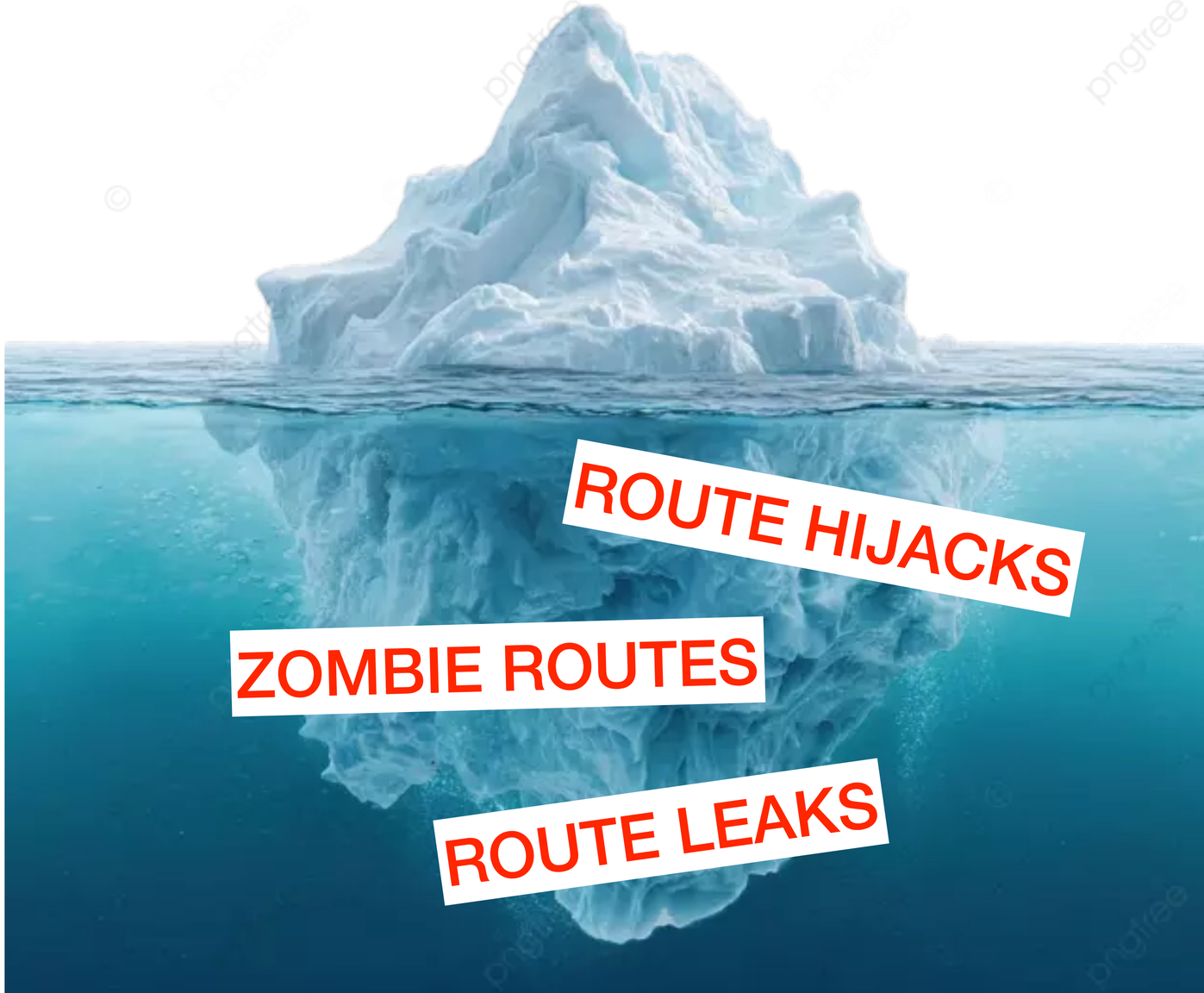

bgproutes.io can gather BGP route updates via the BGP Monitoring Protocol (BMP) — *and it is a game changer!*

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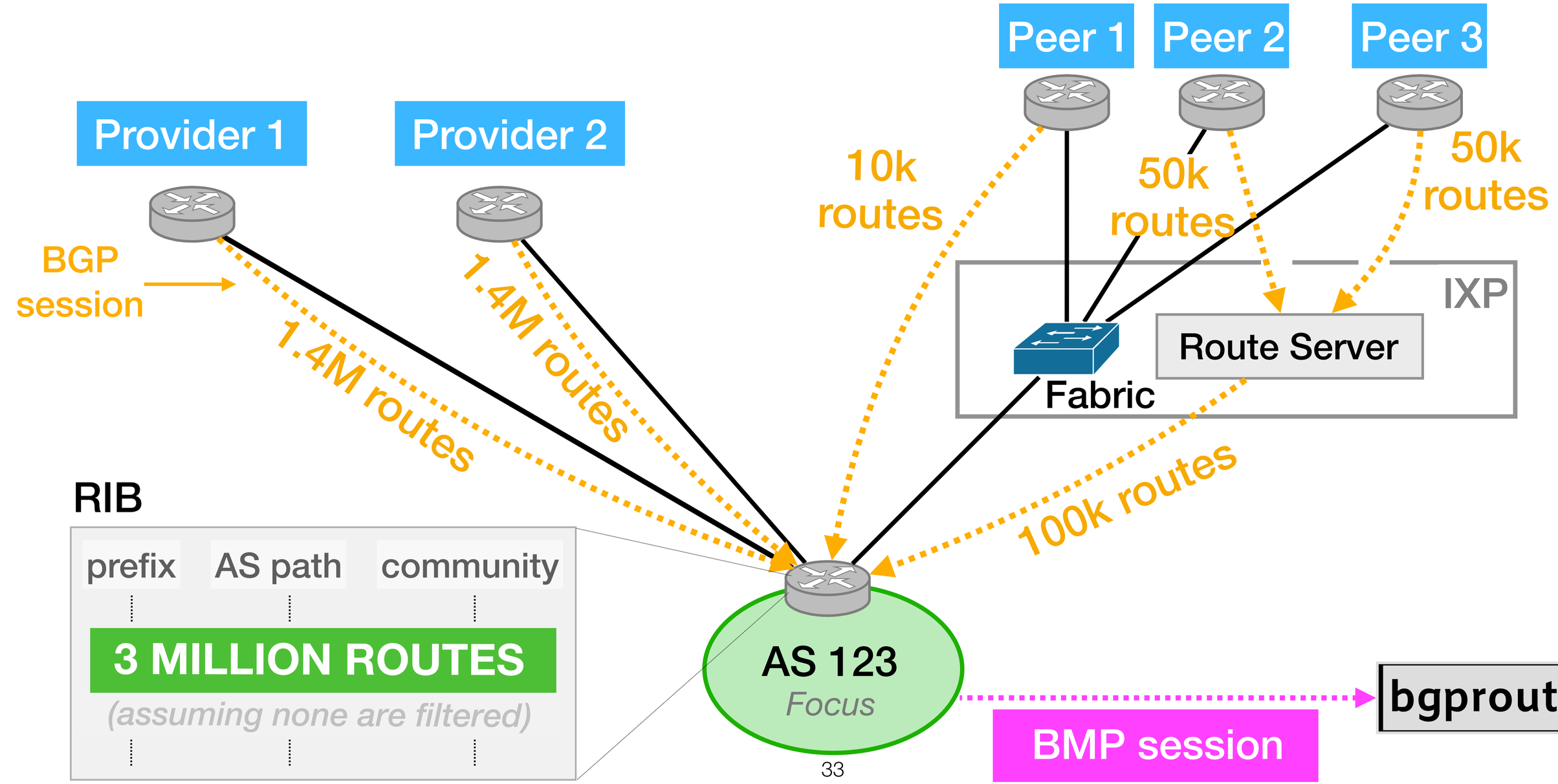
→ BMP is also simple to configure

With BMP: no more useful information wasted



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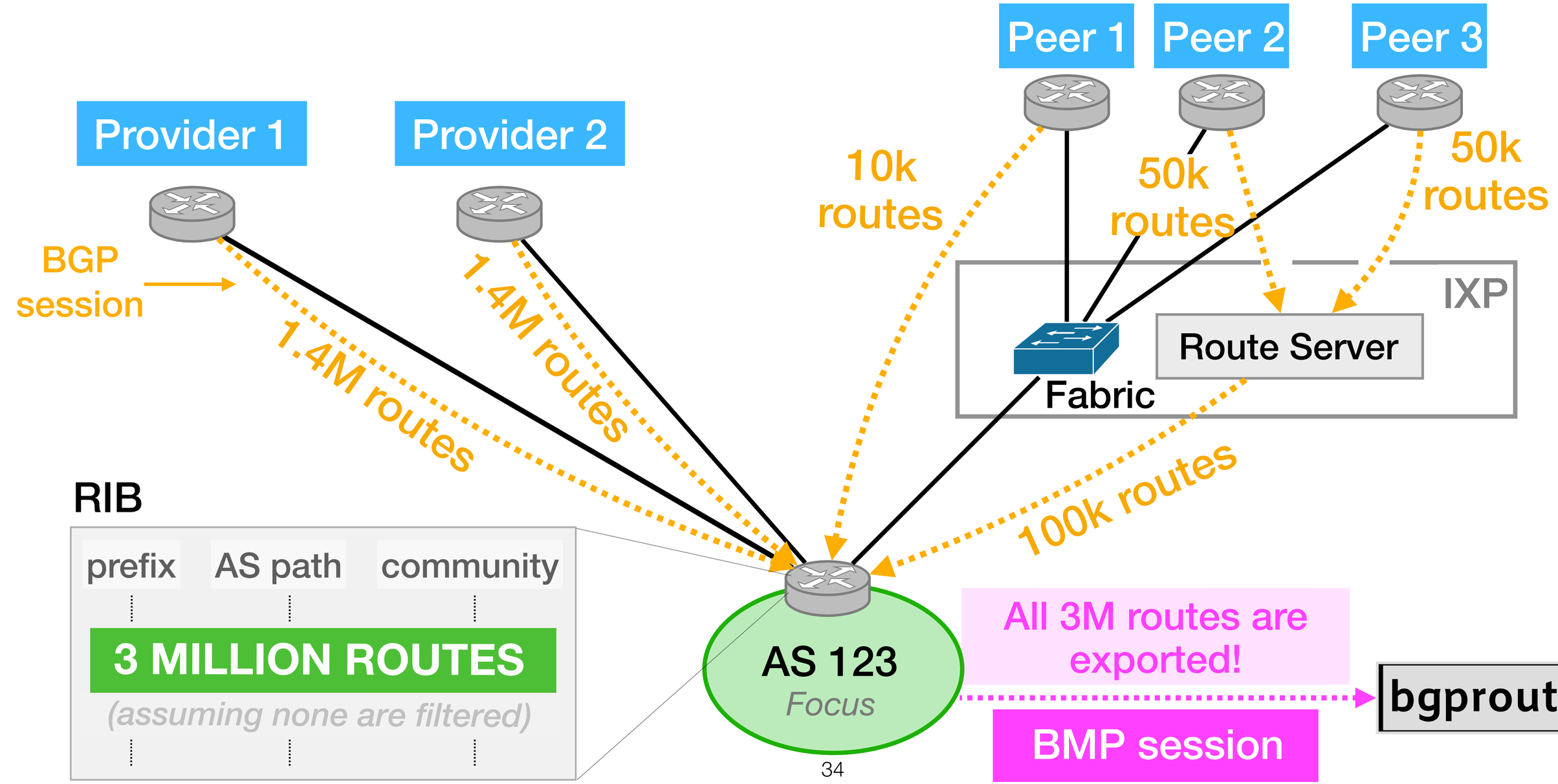

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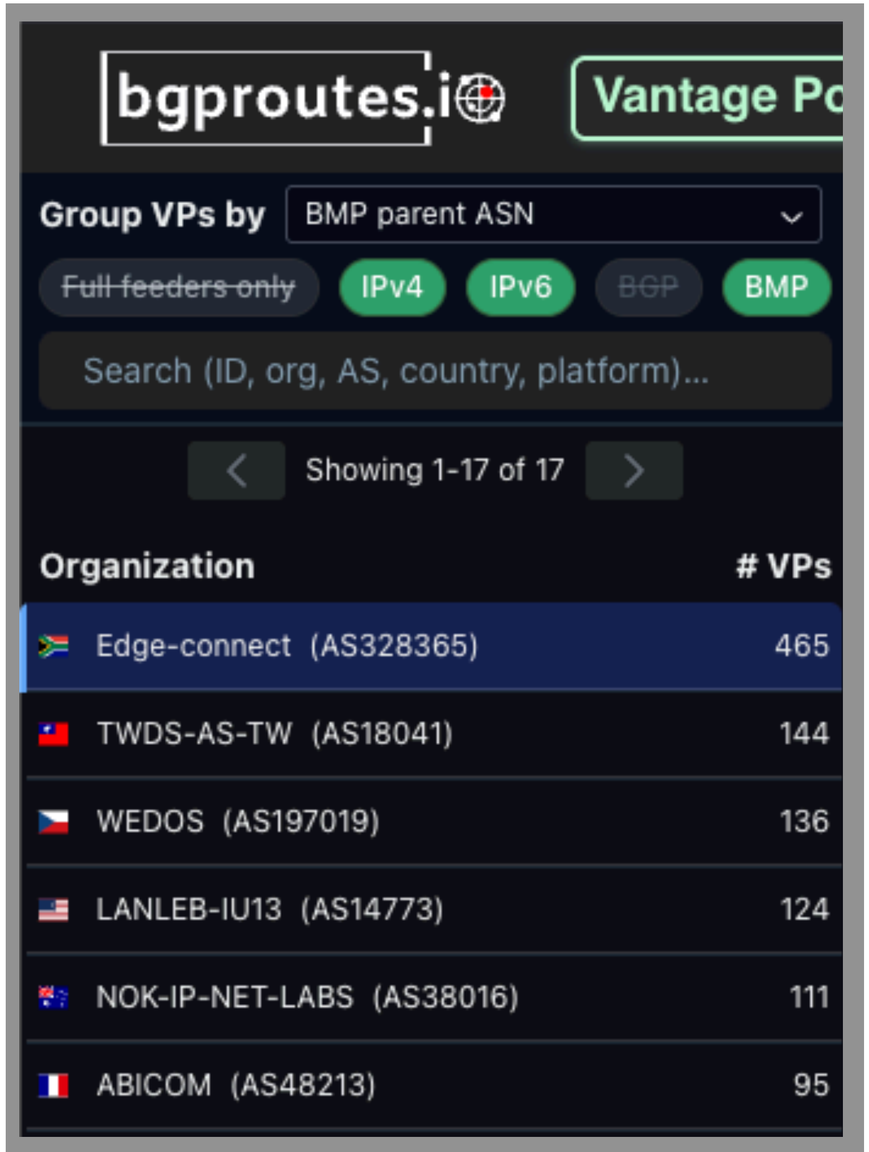
exports all routes it receives from 465 peers!

- One IPv6 full feed from Hurricane Electric
- Few feeds from IXP route servers (e.g. NAPAfrica, INX-ZA)
- Hundreds of feeds from bilateral sessions through IXPs

Several BMP sessions export data for more than 100 peers!
They are visible in our dashboard “Vantage Points Explorer”



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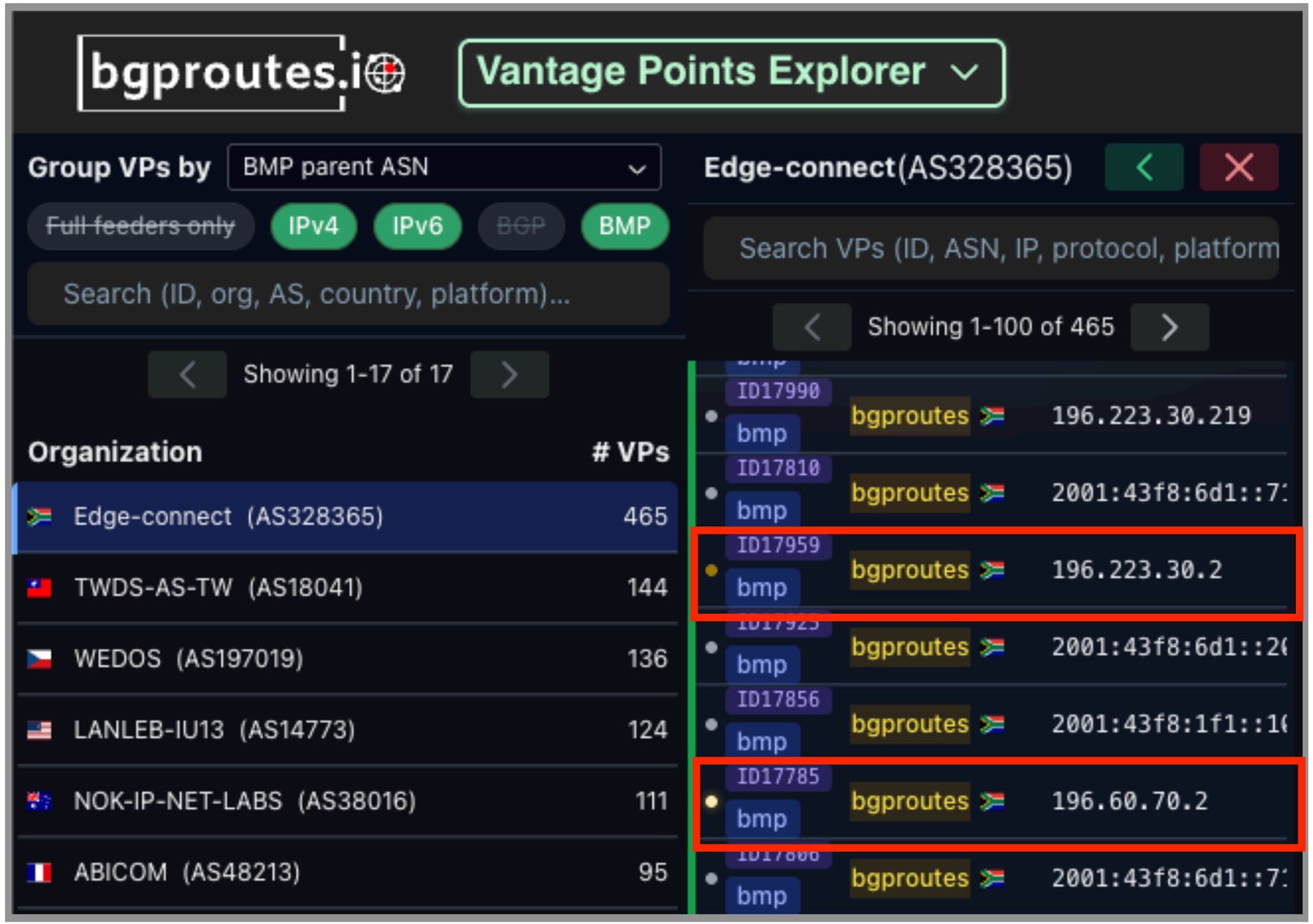

INX-ZA route server

NAPAFRICA route server

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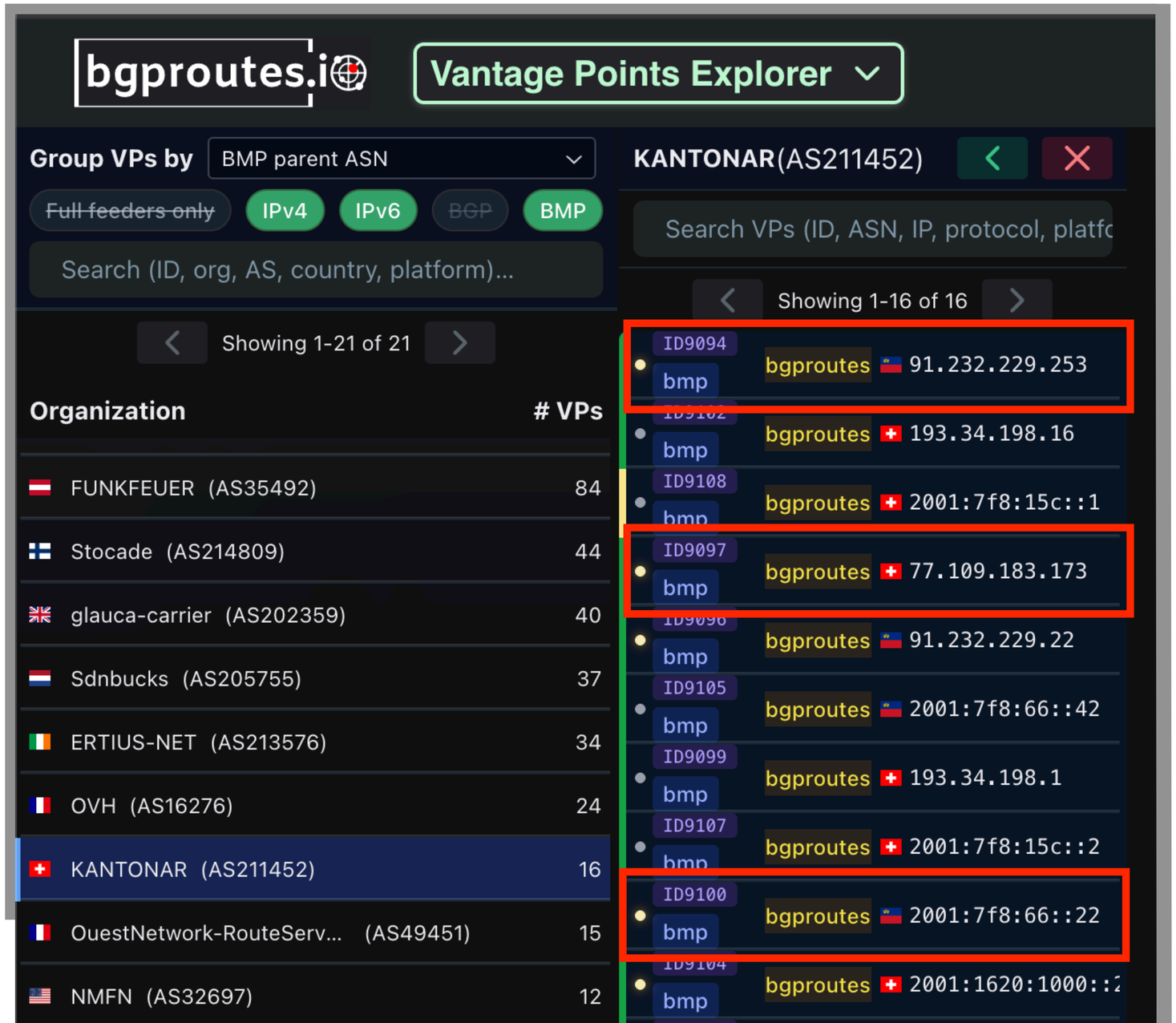

Rheintal IX

Init7

SwissIX

bgproutes.io

Our new next-gen BGP route collection platform

- New strategies for high coverage (e.g., BMP)
- Support the latest security standards (ROV, ASPA)

https://bgproutes.io

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ASPA-based Validation: Verify that there is no valley-free violation in the AS path
Possible outcome:

Upstream Valid or Upstream Invalid or Upstream Unknown	And	Downstream Valid or Downstream Invalid or Downstream Unknown

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- New API and dashboards

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Collecting more data is useful

But only if users can effectively process it

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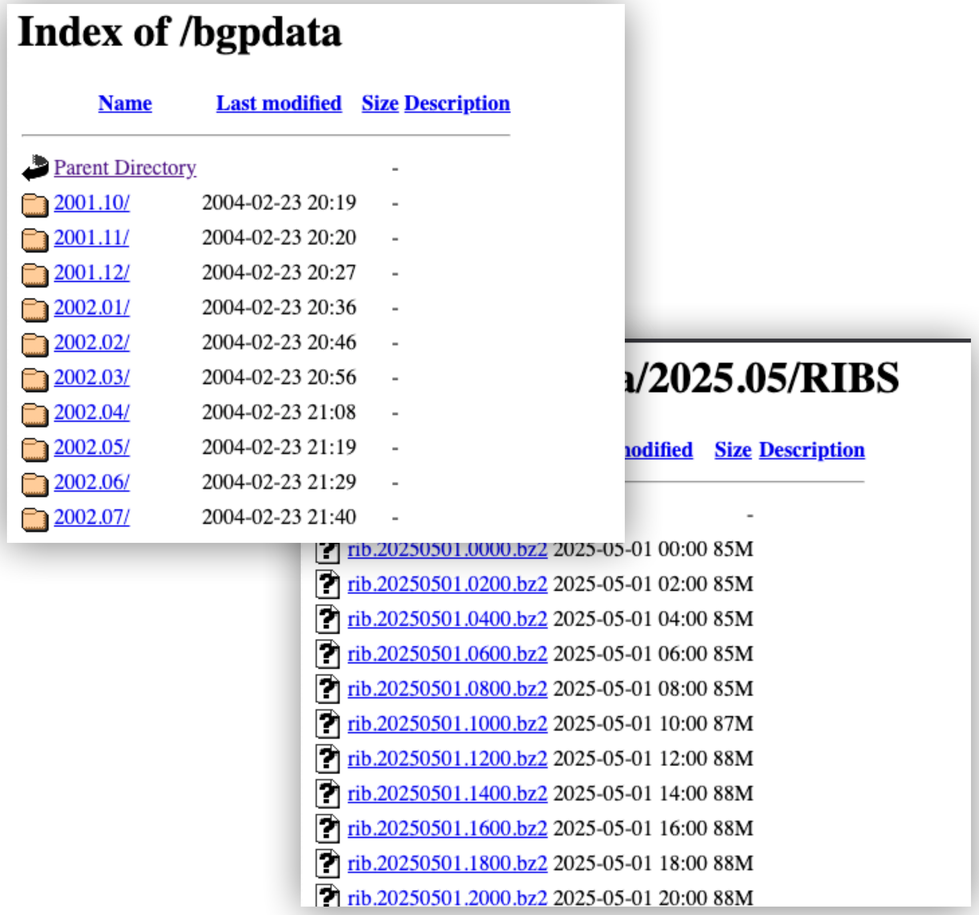
Current MRT archives consist of 1000+ compressed files for updates and RIB dumps

BGP data is intermingled across all these files

➡ MRT is hard to process



Typical MRT archive

bgproutes.io comes with a simple and fast API that provides high-granularity access to BGP data

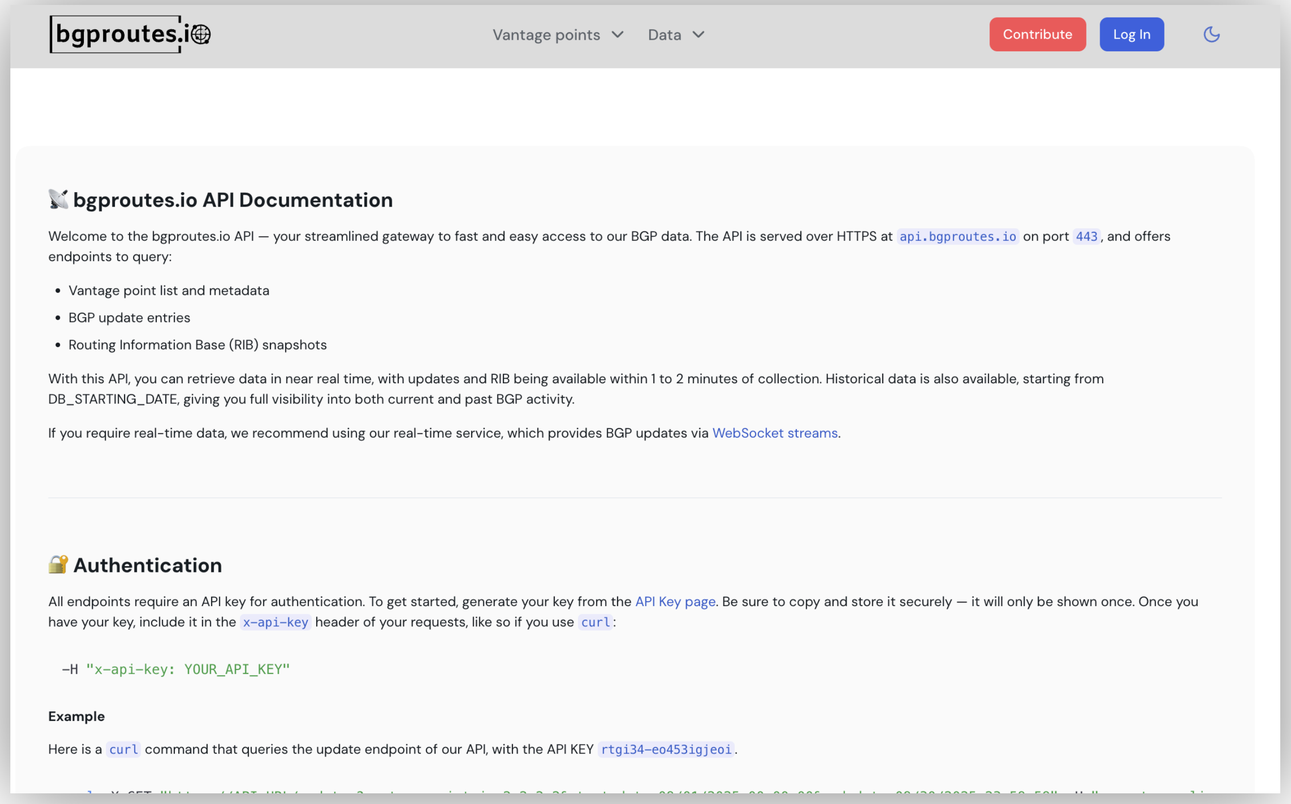
The API offers four endpoints:

vantage_points

updates

rib

topology



bgproutes.io/data_api

Imagine a network operator trying to retrieve all BGP updates for which their ASN appears in the AS path on April 28, 2026

```
# Let’s use our Python client to retrieve the data
from pybgproutesapi import vantage_points, updates
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# We retrieve updates and print them for every VP
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        vp,
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Example of an output

Time	Prefix	ASPath
T1	1/24	1-3-7
T2	2/24	3-9-4
T3	3/24	2-4-3
T4	4/24	3-4-5

Other attributes omitted for space

Each returned update includes the RPKI ROV and ASPA status

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Example of an output

Time	Prefix	ASPath	ROV status	ASPA status
T1	1/24	1-3-7	Valid	Up-valid Down-invalid
T2	2/24	3-9-4	Unknown	Up-valid Down-valid
T3	3/24	2-4-3	Invalid	Up-invalid Down-invalid
T4	4/24	3-4-5	Valid	Up-valid Down-Unknown

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99.3% are Unknown

There are fewer than 1000 ASPA objects so far

Statistics computed in February 2026

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0.7% are Valid

Most involve short AS paths (avg length: 2.6)

Statistics computed in February 2026

bgproutes.io provides four dashboards, and more will come soon

AS Explorer	Prefix Explorer	Vantage Points Explorer	AS Rank
General info about ASes, prefixes, IXPs	“Giant” looking glass	List all VPs and provide statistics	Rank ASes based on various metrics

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https://bgproutes.io

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