



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

RIPE Atlas

Global Measurement Network

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Introduction

- RIPE Atlas is a global active measurements platform
- Goal: view Internet reachability
- Probes hosted by volunteers
- Data publicly available
- atlas.ripe.net



Probes and Anchors

- 12,000+ probes connected in 169 countries (877 RIPE Atlas Anchors)
- 13,000+ results collected per second
- 27,000+ measurements currently running

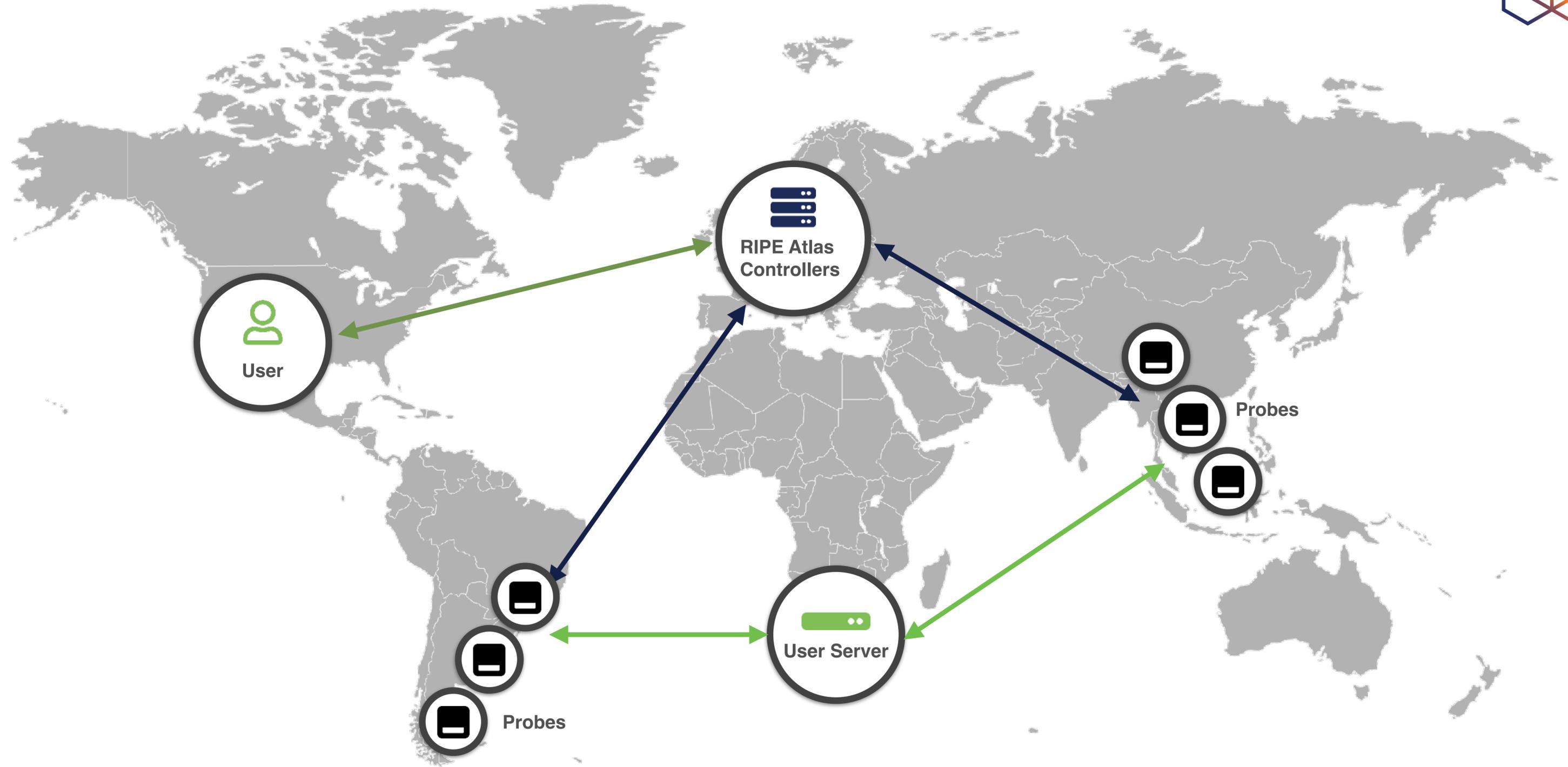


RIPE Atlas Anchors



- **More robust** probes mostly for data centres
- Either physical hardware or a virtual machine
- Generally more reliable and better connected than probes
- Have all features of probes plus extra server features
 - DNS server
 - HTTP(S) server
- **Full mesh** of ping and traceroute measurements is scheduled between all anchors

RIPE Atlas Overview



RIPE Atlas measurements



- **Built-in** global measurements towards root nameservers
 - Visualised as Internet traffic maps
- **Built-in** regional measurements towards “anchors”
- **Users** can run customised measurements
 - ping, traceroute, DNS, SSL/TLS, NTP and HTTP*

Benefits of your own measurements



- Customer problem: cannot reach your server
 - Schedule measurements (pings or traceroutes) from up to 1,000 RIPE Atlas probes worldwide to check where the problem is
- Measuring packet loss on suspected *bad* link
- Testing anycast deployment
- Check the responsiveness and proximity of DNS infrastructure, such as root name servers
- Test IPv6 connectivity

Credits system



- Measurements cost credits
 - one ping result = 3 credits
 - one DNS resolution over UDP/TCP = 10/20 credits
 - one traceroute line = 30 credits
- Mostly to **avoid overload**
- Extra limits for **abuse prevention**
 - maximum number of probes used
 - maximum amount of measurements per target
 - maximum amount concurrent measurements

How can you earn credits?



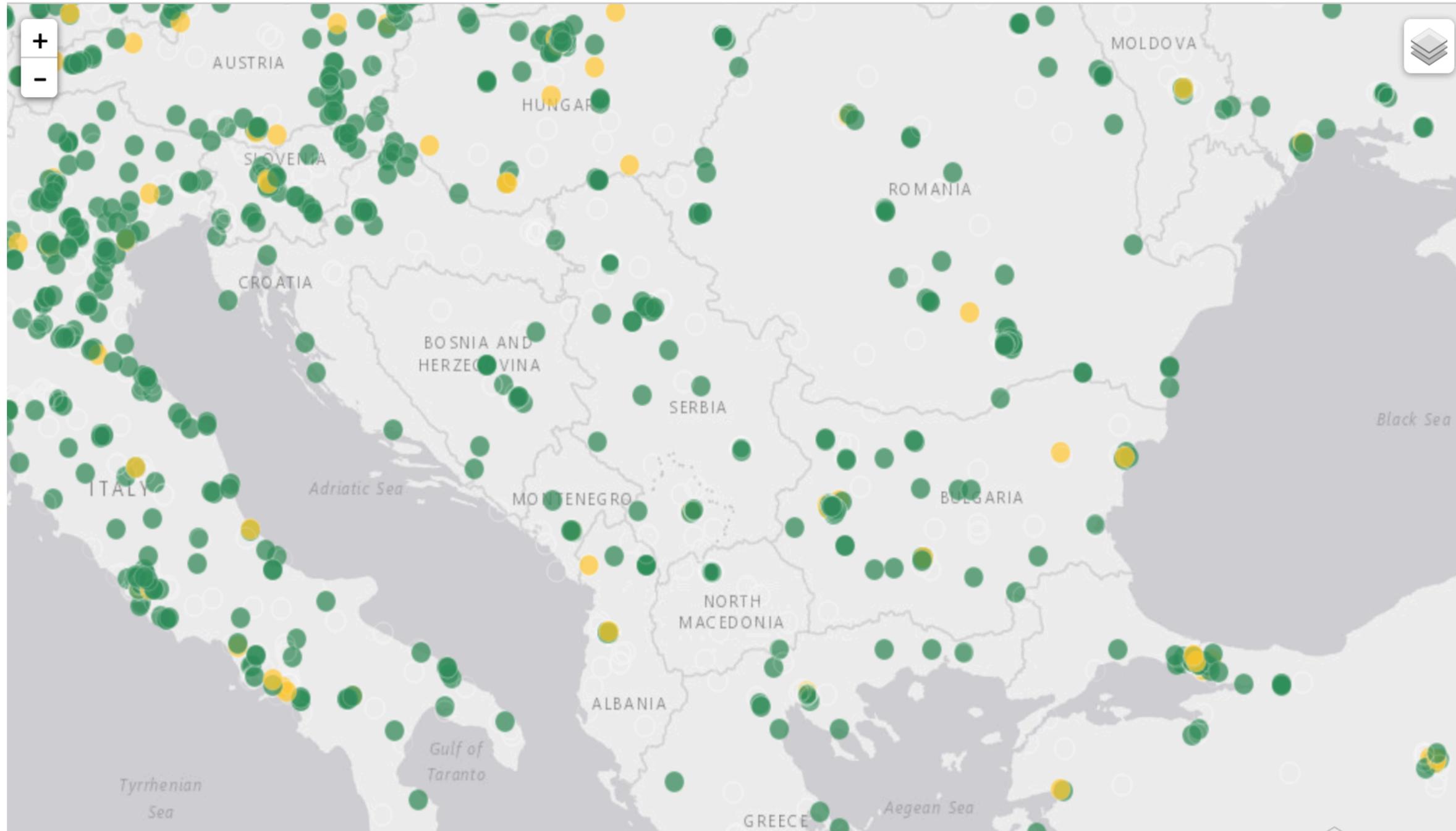
- Hosting a RIPE Atlas probe
- Being a RIPE NCC member
- Hosting an anchor
- Sponsoring probes



RIPE Atlas

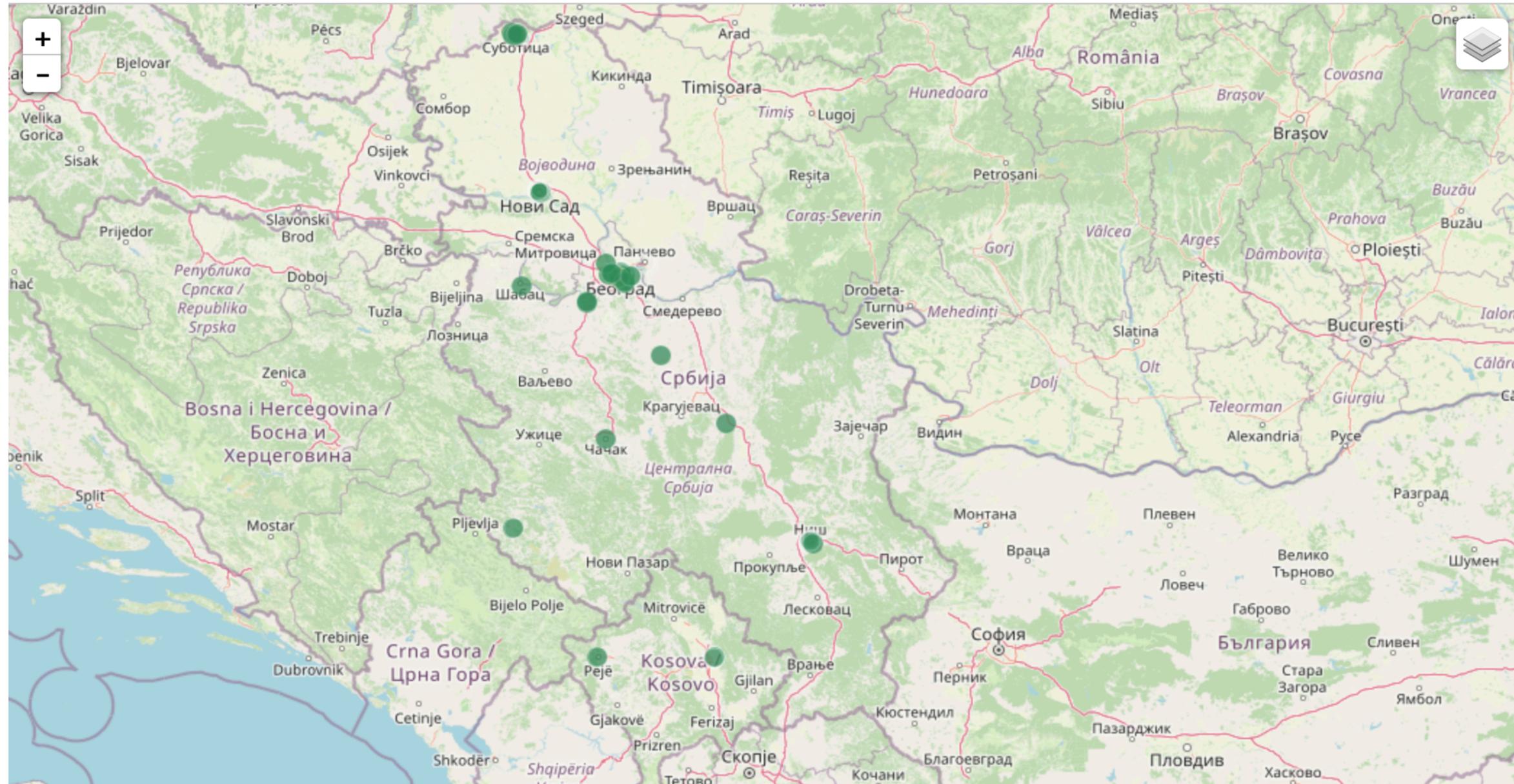
A view into Serbia

Probes in the SEE region



Country	Active probes
RS	39
ME	5
HR	38
BA	13
SI	49
MK	5
RO	78
BG	78

Probes in Serbia



Connected: 39 Disconnected: 1 Abandoned: 106

Anchors in Serbia



Hostname	↓	Probê	↕	Company	↕	City	↕	Country
rs-beg-as13004		7090	☁	Serbian Open Exchange - SOX		Belgrade		Serbia
rs-beg-as51859		6438	☁	Mainstream MRT59-RIPE		Belgrade		Serbia



Total Internet Users: **4758861**

Internet Users in networks with RIPE Atlas probes: **3967068**

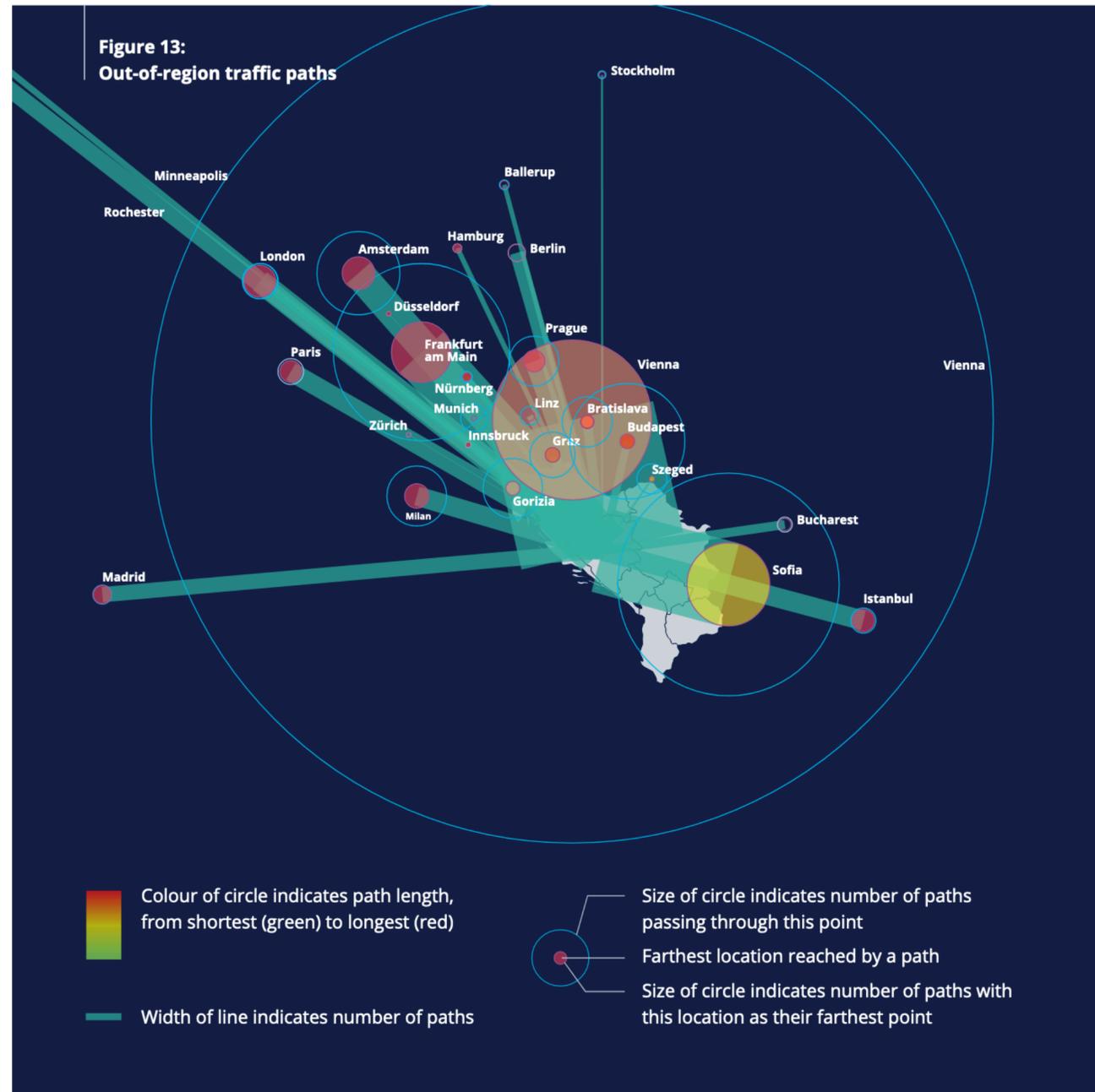
Internet users coverage is estimated using percentage of IPv4 Public probes.

■ IPv4 Public Probes >= 3
 ■ 3 > IPv4 Public Probes > 1

Search:

Network (ASN)	Network Name	Estimated User Population %	IPv4 Public Probes	IPv4 Private Probes	IPv4 Total Probes	IPv6 Public Probes	IPv6 Private Probes	IPv6 Total Probes	More
8400	TELEKOM-AS	33.83	3	0	3	0	0	0	View
31042	SERBIA-BROADBAND-AS	20.77	8	1	9	0	0	0	View
15958	CETIN_doo_AS	12.18	1	0	1	0	0	0	View
41937	MOJASUPERNOVA	10.64	5	0	5	3	0	3	View
44143	A1SERBIA-AS	8.92	0	0	0	0	0	0	Apply for a probe
41897	SAT-TRAKT-AS	1.93	1	0	1	0	0	0	View
206262	Telkos	1.69	0	0	0	0	0	0	Apply for a probe
9125	ORIONTELEKOM-AS	1.68	3	1	4	0	0	0	View
33983	ARTMOTION-AS	1.45	1	0	1	0	0	0	View

SEE country report (2020)



TraceMON

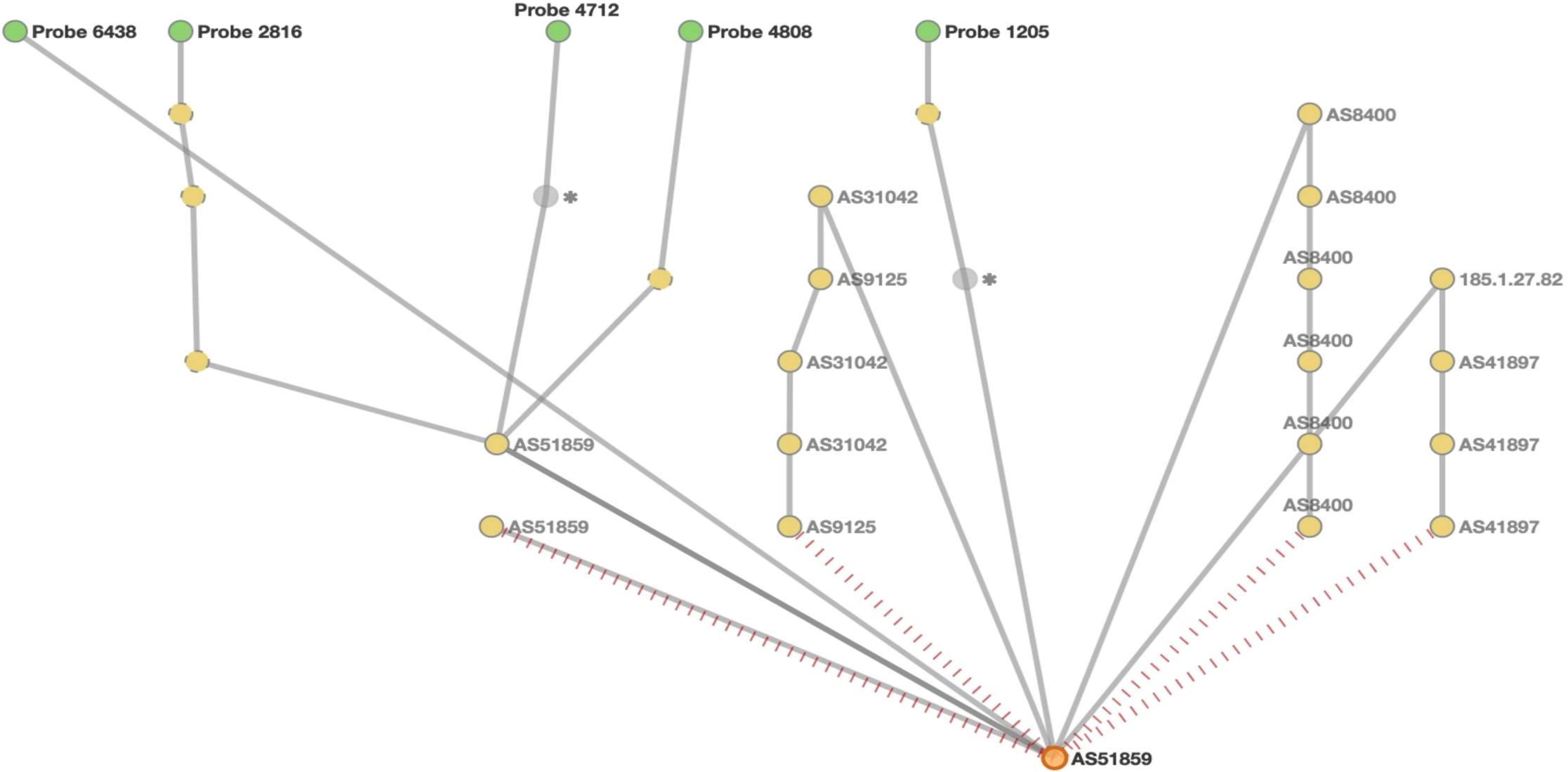


Traceroute Visualisation



Traceroutes to 185.168.19.28 from 8 of 37 probes [\[select\]](#) at September 7th 2022, 13:00:03 UTC

Nodes label: Auto Reverse lookup Country code



● Source ● Target ● Host ● IXP ● Private IP ● No response — Connected - - - - Disconnected

DNSMON



RIPE Atlas measurements for zone rs. started for DNSMON

Show **50** entries

Search:

Hostname	IP Address	Active	Traceroute	TCP SOA	UDP SOA	hostname.bind	version.bind
a.nic.rs.	91.199.17.59	Yes	3100460	3100459	3100458	3100457	3100456
a.nic.rs.	2001:67c:69c::59	Yes	3100485	3100484	3100483	3100482	3100481
b.nic.rs.	2a00:e90:0:3::3	Yes	30097572	30097571	30097570	30097569	30097568
b.nic.rs.	195.178.32.2	Yes	3100465	3100464	3100463	3100462	3100461
d.nic.rs.	193.0.9.107	No	3100445	3100444	3100443	3100442	3100441
d.nic.rs.	2001:67c:e0::107	No	3100450	3100449	3100448	3100447	3100446
f.nic.rs.	204.61.216.32	Yes	3100455	3100454	3100453	3100452	3100451
f.nic.rs.	2001:500:14:6032:ad::1	Yes	3100475	3100474	3100473	3100472	3100471
g.nic.rs.	147.91.8.6	Yes	3100490	3100489	3100488	3100487	3100486
h.nic.rs.	91.199.17.60	Yes	3100425	3100424	3100423	3100422	3100421
h.nic.rs.	2001:67c:69c::60	Yes	3100440	3100439	3100438	3100437	3100436
k.nic.rs.	192.5.4.1	No	3100470	3100469	3100468	3100467	3100466
k.nic.rs.	2001:500:2e::1	No	3100480	3100479	3100478	3100477	3100476
l.nic.rs.	194.146.106.114	Yes	3100430	3100429	3100428	3100427	3100426
l.nic.rs.	2001:67c:1010:29::53	Yes	3100435	3100434	3100433	3100432	3100431

Showing 1 to 15 of 15 entries

◀ Previous Next ▶

Become a host!



- Still a large percentage of disconnected probes
- Applying for a new probe: SEE as an underrepresented region
- Putting an anchor in your network
- Don't wait - install a software probe today!



Questions



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