Joint Research on IPv4/IPv6 Network Management: Research Development and Demonstration

AfgREN | BdREN | CamREN | LEARN | Mae Fah Luang University | MYREN | NREN | PERN

SingAREN | TEIN*CC | ThaiREN | University of Computer Studies, Yangon | University of Gottingen | University of Malaya | University of Surrey

Tsinghua University | Beijing University of Posts and Telecommunications | The Institute of Information Engineering, CAS | Bitway | The Department of Computing (COMP), the Hong Kong Polytechnic University | UESTC | E-Hualu | Shandong University

Mar. 14, 2023

APAN 55, NEPAL

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Project Web Site:
https://cgtf.net

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  - Passive Traffic Measurement—FlowWatch
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  - BGP Routing Sharing —CGTF RIS
  - BGP Routing Monitoring and Analysis — BGPWatch
- **Summary and Future Work**

International Cooperation

14 countries, 23 research organizations

Excellent Mix of Key Experiences of IPv4/IPv6 Network Management

13 research organizations from 11 Asian countries

TEIN*CC
SingAREN, Singapore
ThaiRen, Thailand
MYREN, Malaysia
LEARN, Sri Lanka
NREN, Nepal
PERN, Pakistan
BdREN, Bengal
CamREN, Cambodia
AfgREN, Afghanistan
University of Computer Studies, Yangon, Myanmar
University of Malaya , Malaysia
Mae Fah Luang University, Thailand

2 research organizations from European countries

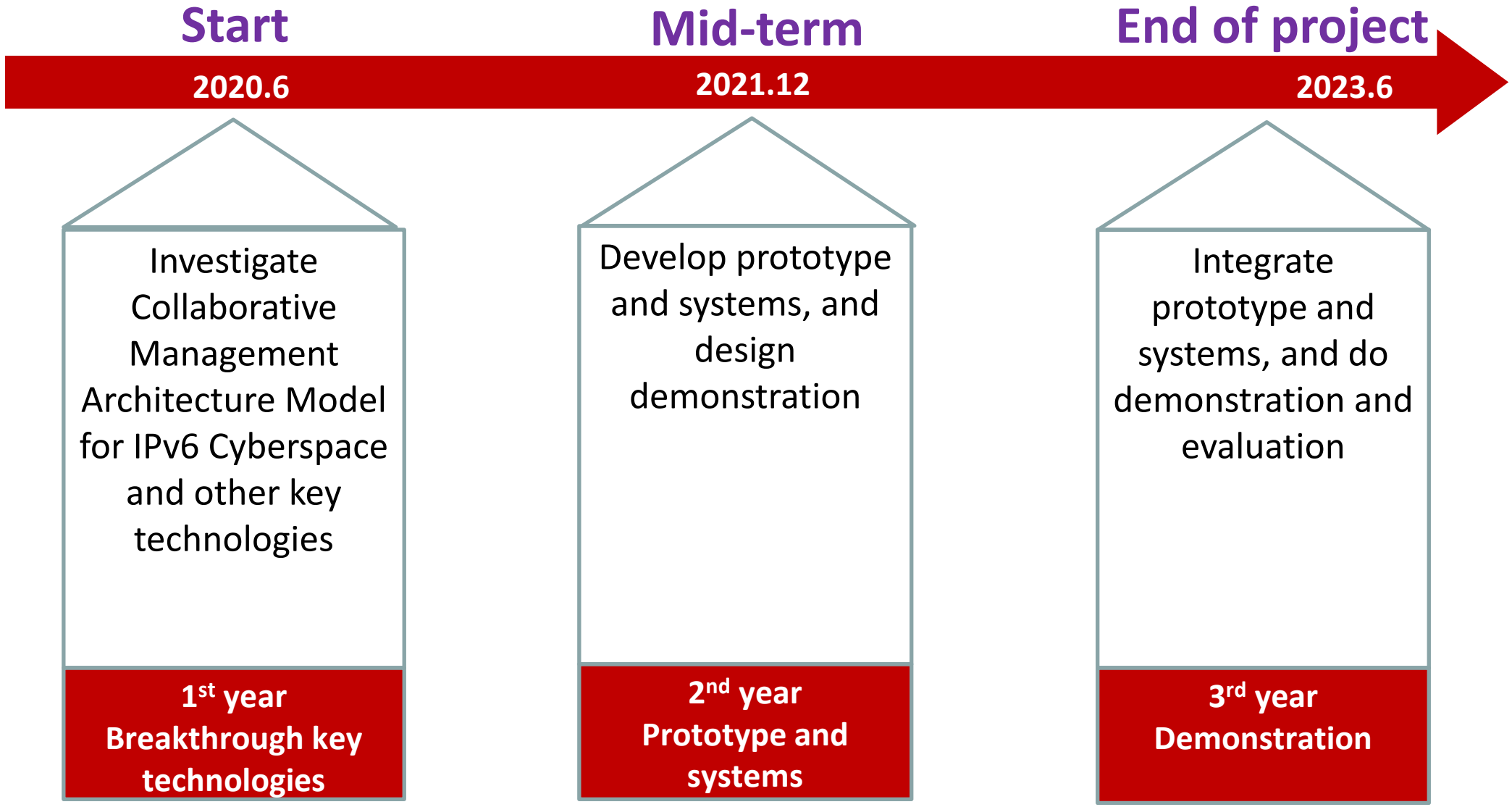
University of Gottingen, Germany
University of Surrey, UK

8 Chinese research organizations

Tsinghua University
BUPT
CAS
Bit-Way
Shenzhen Research Institute, HKPU
UESTC
Shandong University
eHualu

Promote Network Technology Innovation and Application Demonstration

Project Plan & Schedule



Working Group

WGs / Organization	Passive Traffic Measurement	Active Probe	Network Looking Glass	BGP Routing Info Sharing/Monitoring	Network Telescope	International Rules of Cyber Governance(IRCG)
SingAREN		√	√	√		√
ThaiRen	√	√	√	√	√	√
LEARN	√	√	√	√	√	√
BDREN	√	√	√	√	√	√
MYREN		√	√	√		√
AfgREN			√	√	√	√
NREN						√
CAMREN						√
PALNREN						√
Yangon University of Computer Study						√
University of Malaya						√
Mae Fah Luang University,Thailand						√
University of Gottingen	√					√
Surrey University	√			√		√

Work Progress

Project Web Site:
https://cgtf.net

- **Progress In the Following Aspect:**
  - Active Probe Platform—GPerf
  - Passive Traffic Measurement—FlowWatch
  - Network Looking Glass—CGTF LG
  - BGP Routing Sharing —CGTF RIS
  - BGP Routing Monitoring and Analysis — BGPWatch

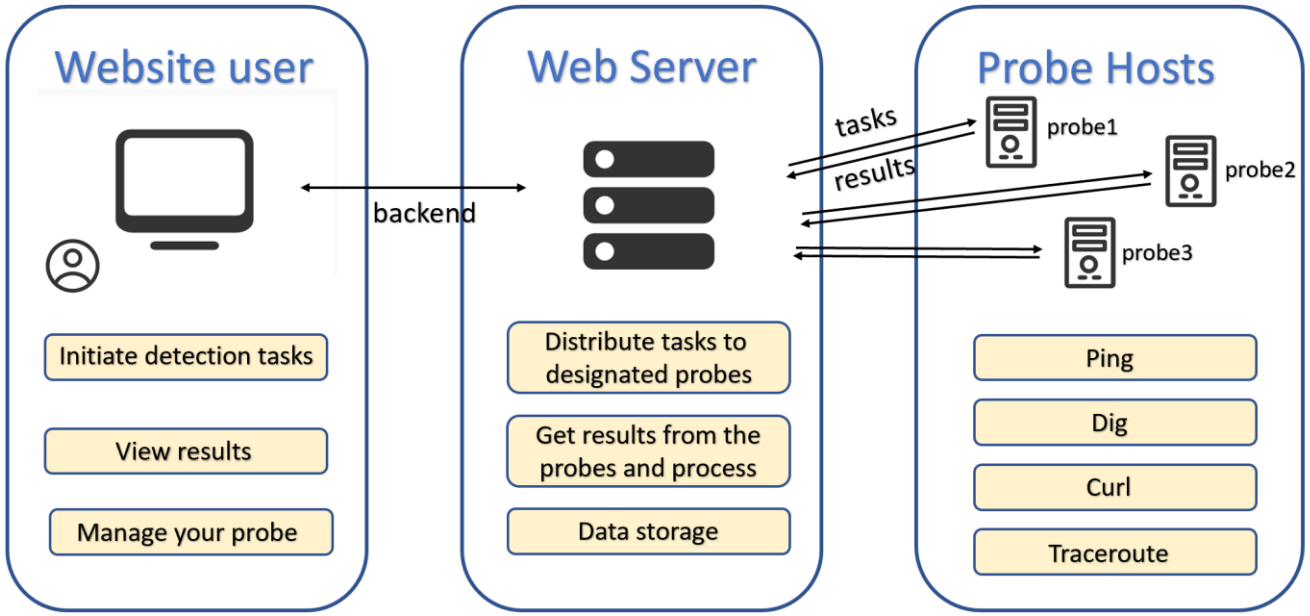
Active Probe Platform—GPerf

What is GPerf ?

- An active Internet measurement platform
  - Mechanism: Initiate detections through several deployed probes
  - Target: Domain names on the Internet
  - Purpose: Obtain and visualize periodic results

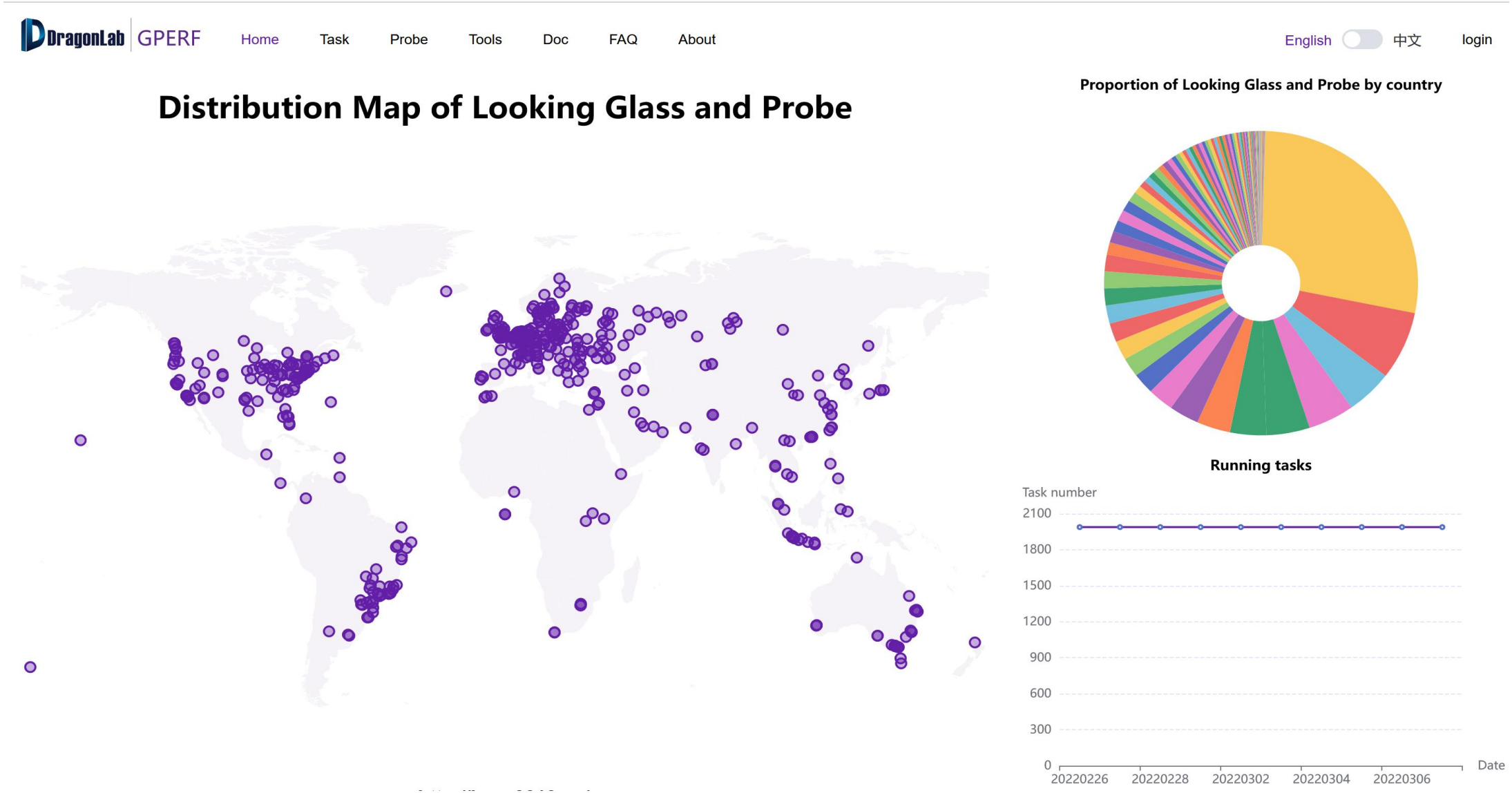
- Functions provided
  - *a) ping*
  - *b) dig*
  - *c) curl*
  - *d) traceroute*

- Supports both **IPv4** and **IPv6**



Homepage

https://gperf.cgtf.net/



Available Probe list

DragonLab GPERF Home Task Probe Tools Doc FAQ About English 中文 login

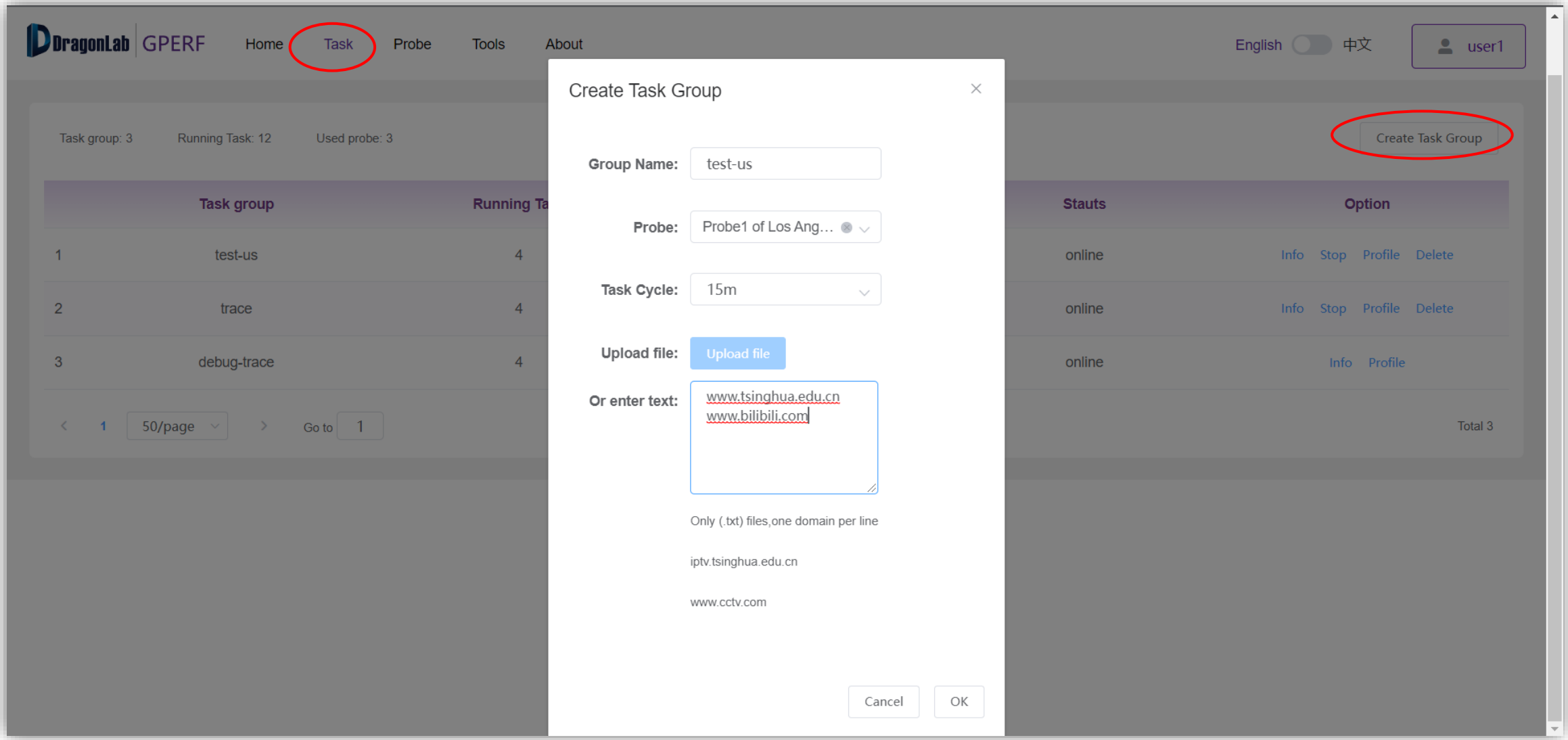
Probe

Probe:18 From 14 Country, 17 City

	Status	Probe name	IPv4 Address	IPv6 Address	Country	City	Total Task	Option
1	✓	LEARN-Probe	192.248.3.218	2401:dd00:1:1:5054:ff:fe32:e3b2	Srilanka	Colombo	12	
2	✓	ThaiREN	202.28.194.7	N/A	Thailand	Bangkok	4	
3	✓	Tsinghua1	203.91.121.239	2001:da8:217:1213::239	China	Beijing	0	
4	✓	SingAREN-SOE-1	203.30.39.26	2001:df0:21a:0:20c:29ff:fe56:5098	Singapore	Singapore	8	
5	✓	TS-BJ-ali	101.200.124.121	2408:400a:69:cd00:3061:7f23:24a4:85f3	China	Bejing	404	
6	✓	BdREN	103.157.134.4	N/A	Bangladesh	Dhaka	32	
7	✓	TS-JP-ali	8.209.254.12	N/A	Japan	Japan	144	
8	✓	TS-SG-ali	8.222.162.223	240b:4000:b:db00:8106:7413:738f:f1ee	Singapore	Singapore	708	
9	✓	TS-GB-ali	8.208.87.165	N/A	United Kingdom	london	284	
10	✓	TS-US-ali	47.251.15.44	N/A	United States	silicon valley	140	

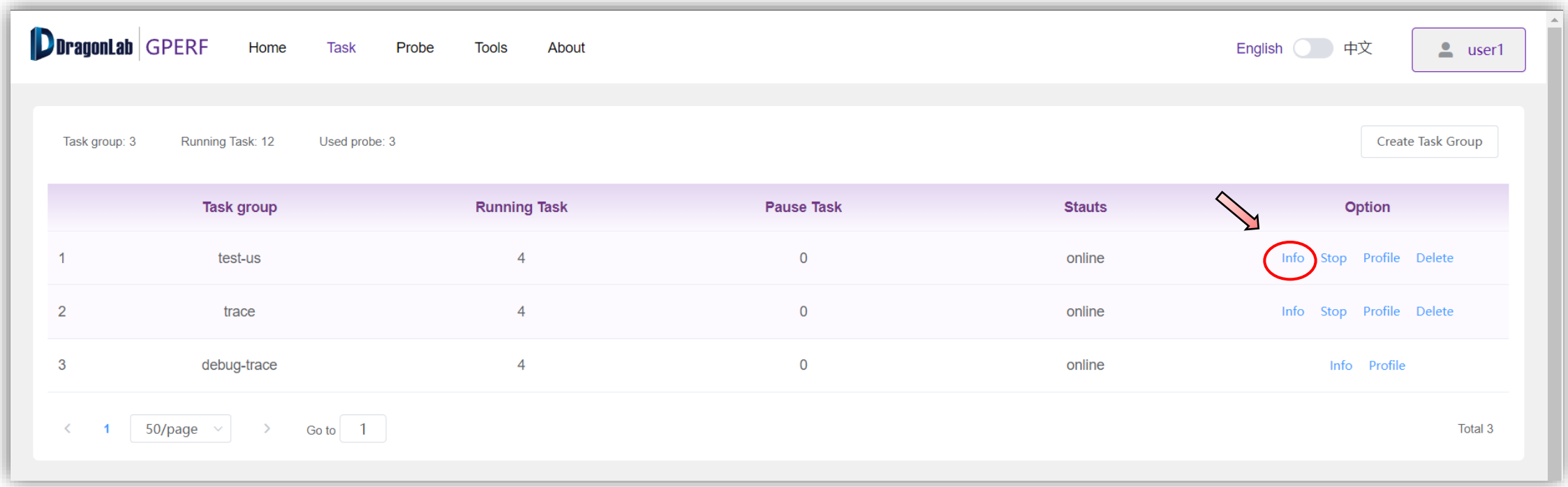
1 2

Create your probe task goup



Manage task group

- Only the task group creator can perform the ‘Stop’ and ‘Delete’ operations to the corresponding task
- Click the ‘Info’ operation of a task group to enter the task group details interface



View Task Results

- The task group interface shows the average value of the most recent detection results for each target domain name
- Click the ‘Info’ operation of a domain name row to view the details of detection results for the corresponding domain name

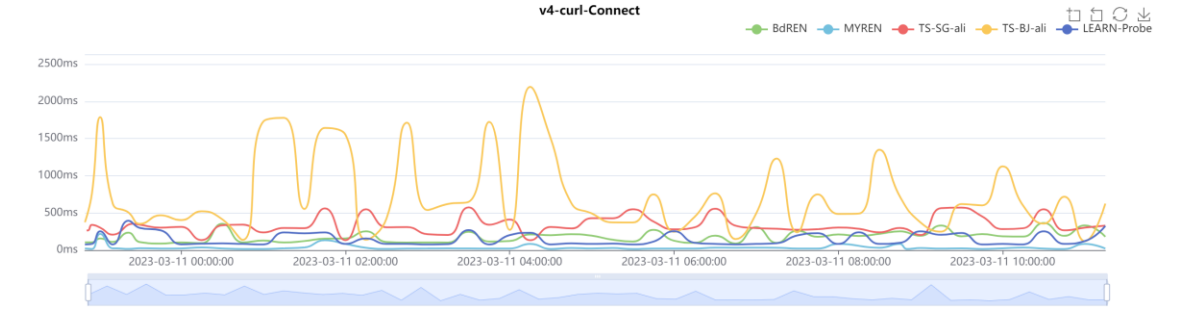
DragonLab GPERF Home Task Probe Tools Doc FAQ About English 中文 login

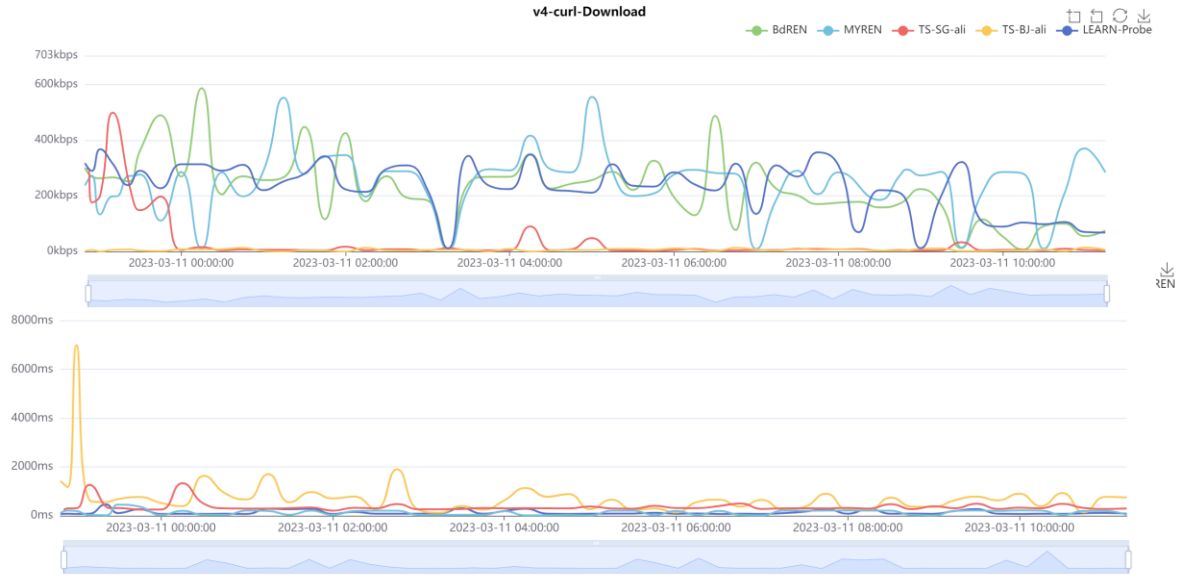
Now Group:all-task

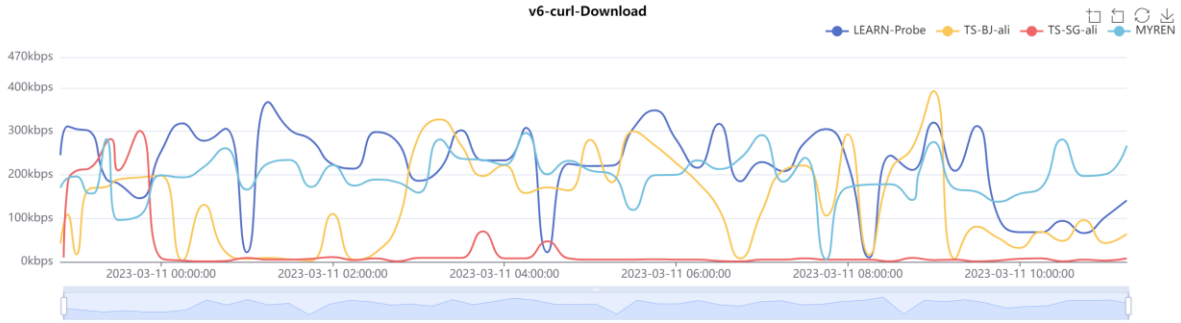
Running Task:20 Used probe:5

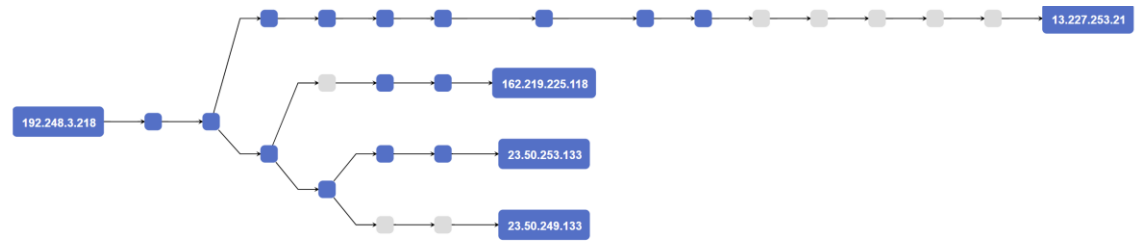
	Domain Name	DIG Response Time (ms)	PING Response Time (ms)	HTTP Pesponse Time (ms)	Option
1	www.jd.com	14.2	38.93	546.76	Info
2	www.microsoft.com	17.6	54.99	84.28	Info
3	www.amazon.com	72.8	73.77	460.34	Info

Result Details

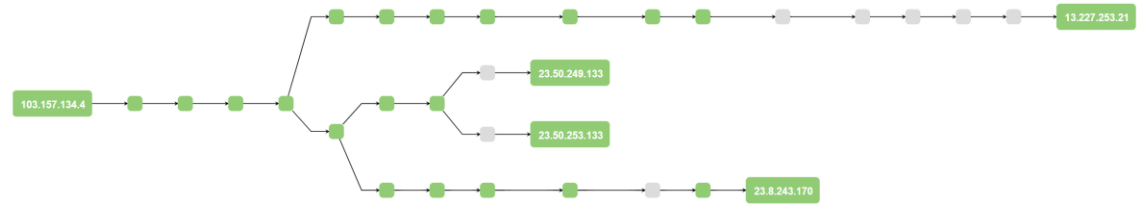


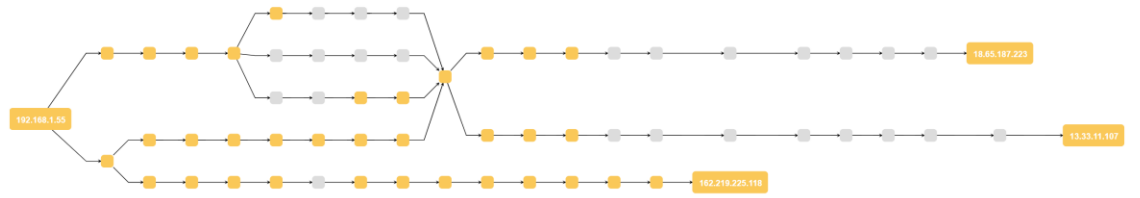




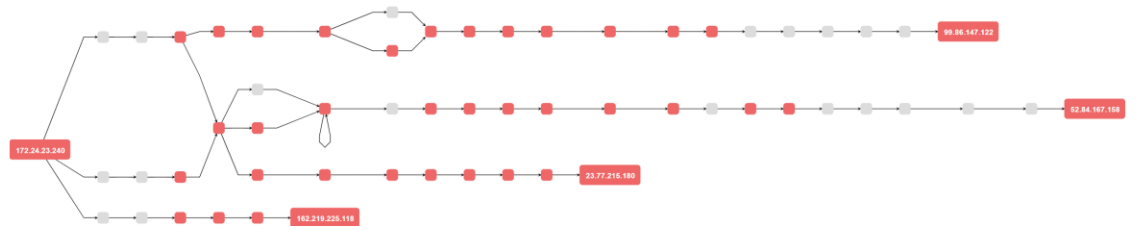


Route Path-BdREN





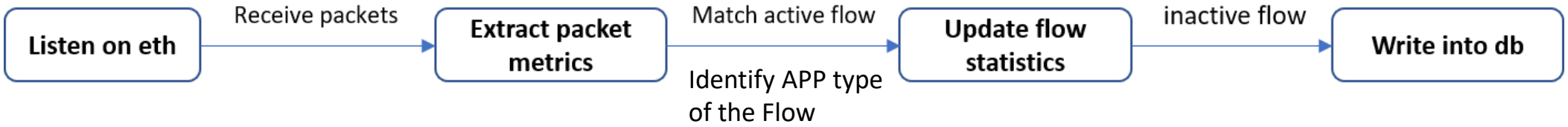
Route Path-TS-SG-ali



Passive Traffic Measurement—FlowWatch

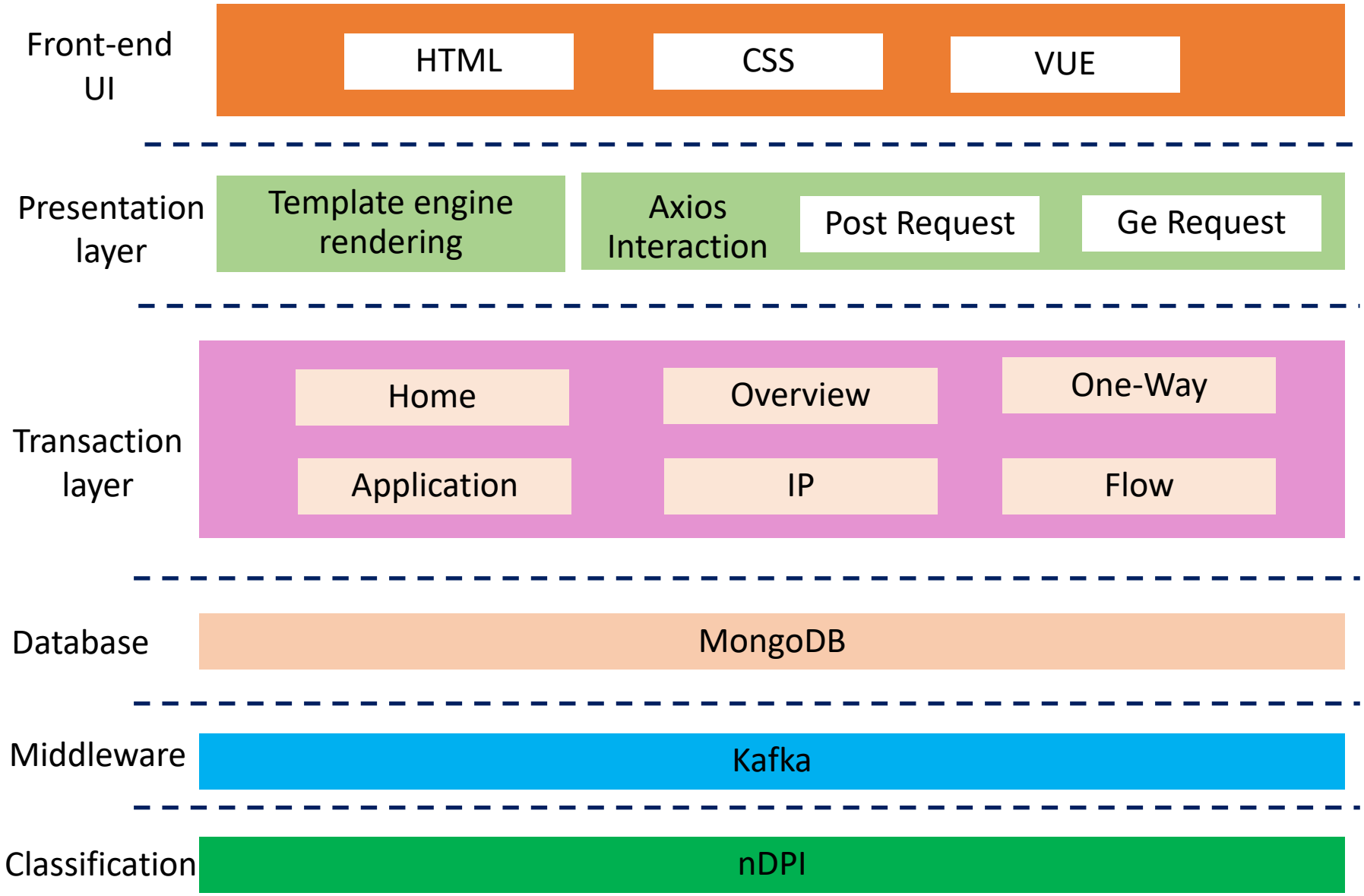
Traffic Measurement System

- Input: rawpacket or netflow traffic



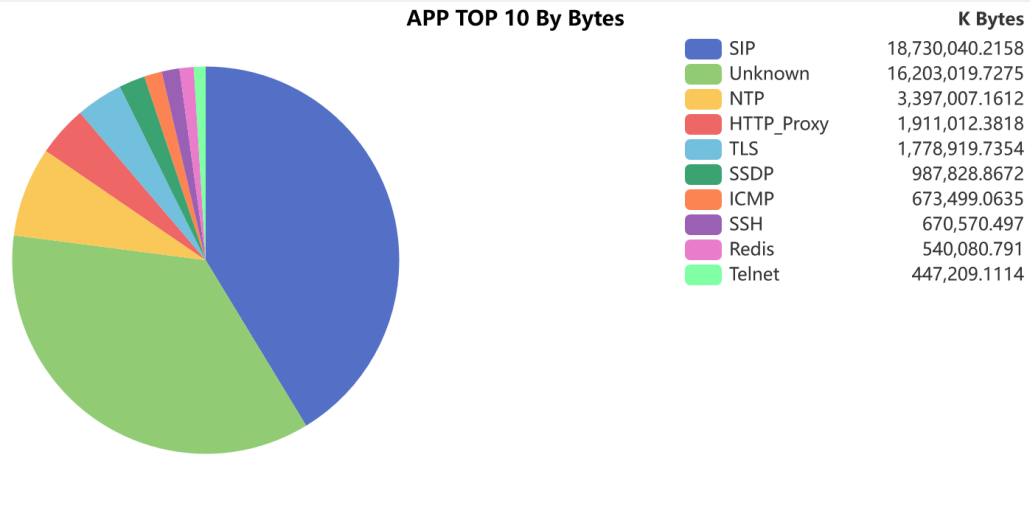
- Speed-up techniques
  - Each flow has a unique ID which is hashed with its five-tuple, so it's fast to match the active flow that one packet belongs to
  - Use Aho-Corasick algorithm to match string pattern in the knowledge base
  - http://flowwatch.cgtf.net

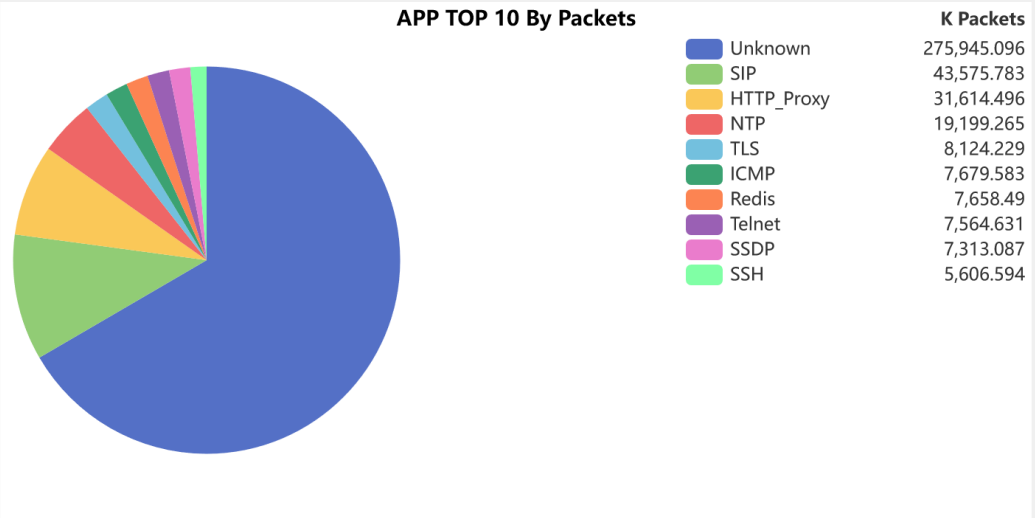
Architecture

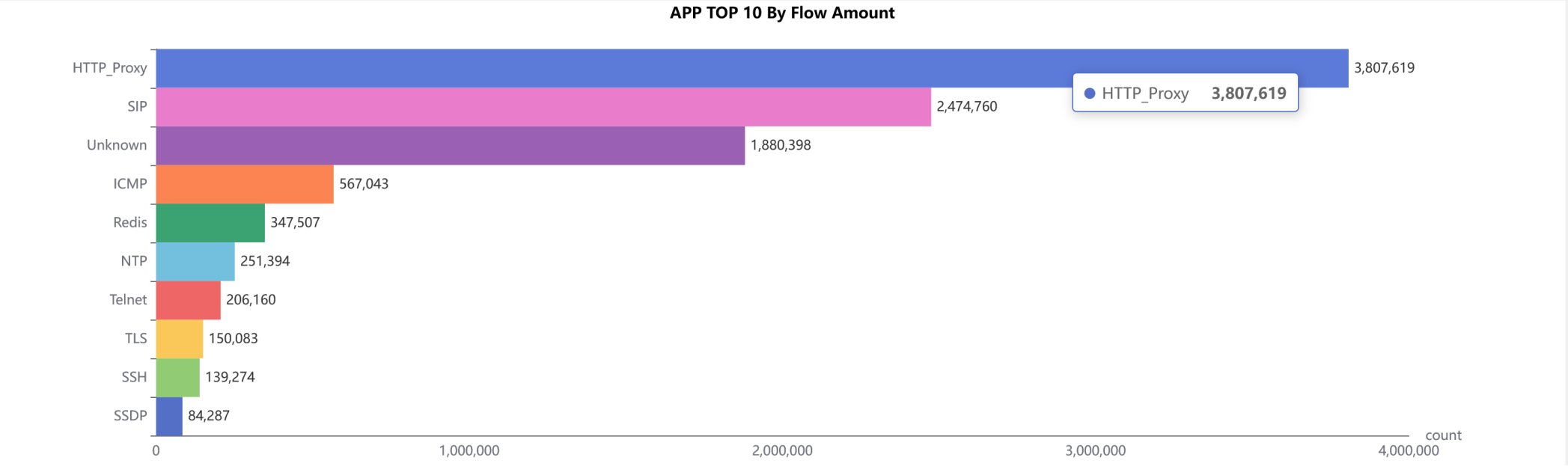


- Classify traffic into application by nDPI
- Distribution data by Kafka to deal with high traffic
- Aggregate and do statistics on the data
- MongoDB can be clustered to deal with high traffic

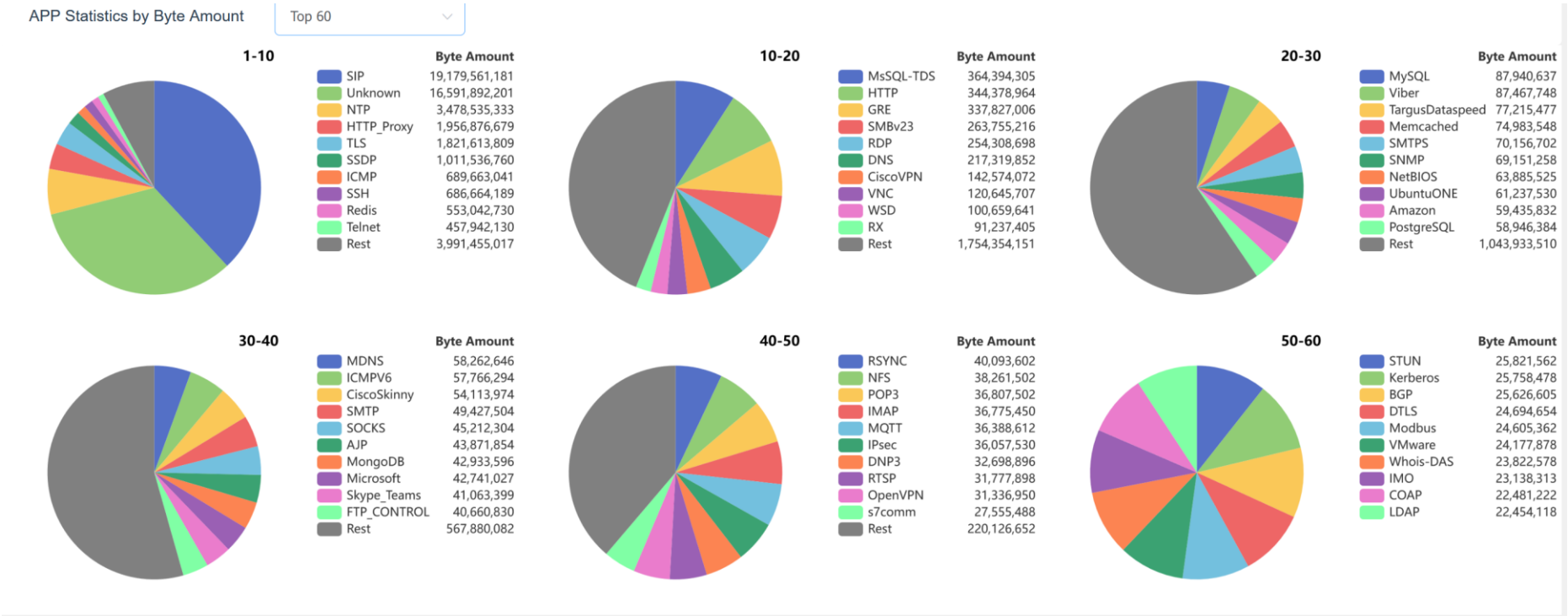
TOP 10 APP

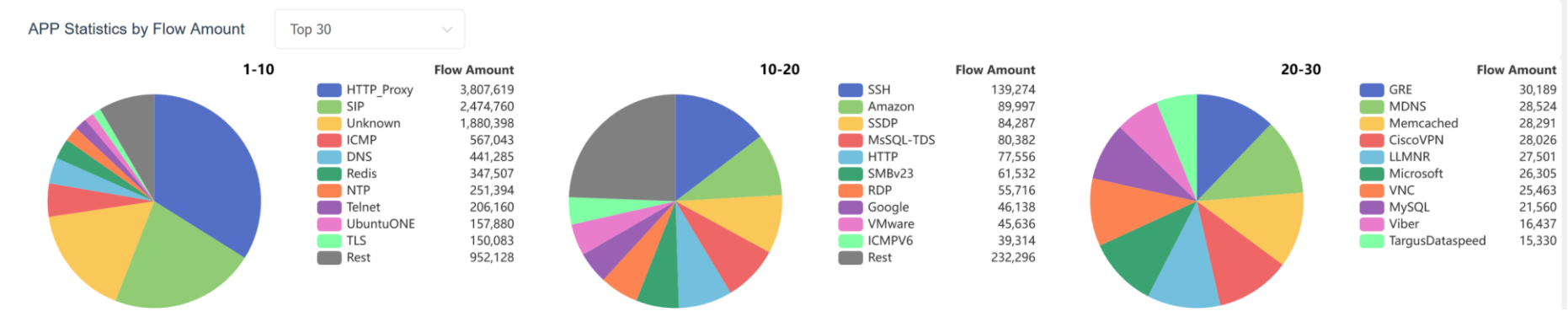

APP TOP 10 By Bytes
K Bytes
SIP 18,730,040.2158
Unknown 16,203,019.7275
NTP 3,397,007.1612
HTTP_Proxy 1,911,012.3818
TLS 1,778,919.7354
SSDP 987,828.8672
ICMP 673,499.0635
SSH 670,570.497
Redis 540,080.791
Telnet 447,209.1114


APP TOP 10 By Packets
K Packets
Unknown 275,945.096
SIP 43,575.783
HTTP_Proxy 31,614.496
NTP 19,199.265
TLS 8,124.229
ICMP 7,679.583
Redis 7,658.49
Telnet 7,564.631
SSDP 7,313.087
SSH 5,606.594

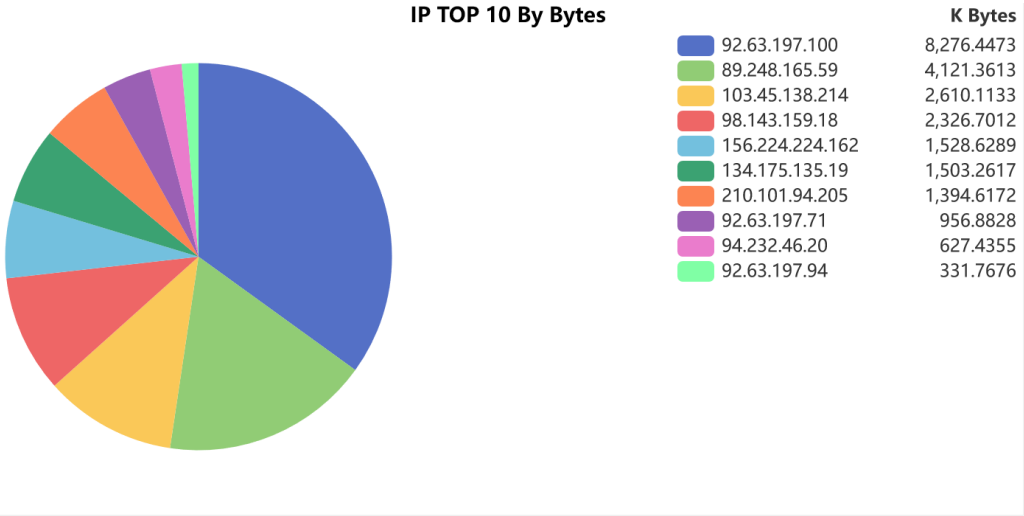

APP TOP 10 By Flow Amount
HTTP_Proxy 3,807,619
SIP 2,474,760
Unknown 1,880,398
ICMP 567,043
Redis 347,507
NTP 251,394
Telnet 206,160
TLS 150,083
SSH 139,274
SSDP 84,287
HTTP_Proxy 3,807,619
count
0
1,000,000
2,000,000
3,000,000
4,000,000

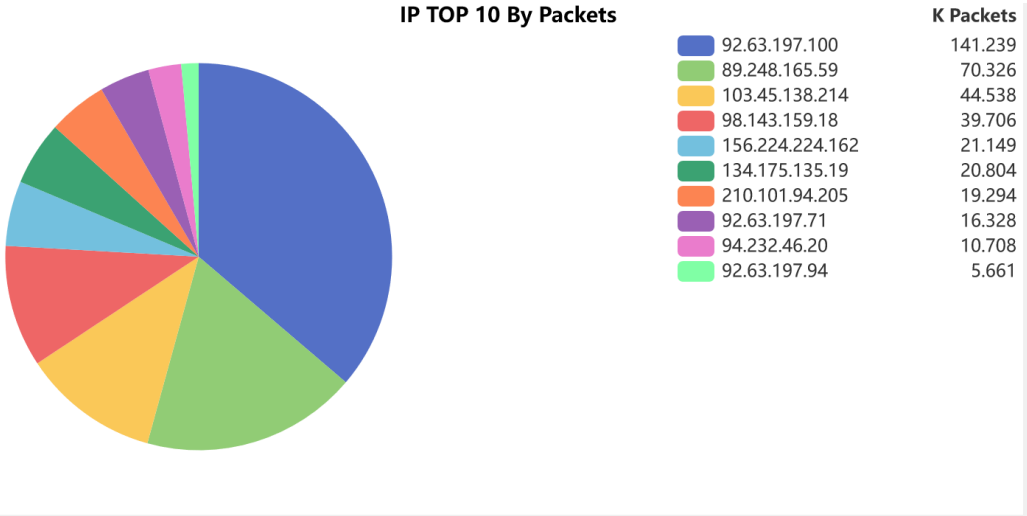
Statistics of Each APP

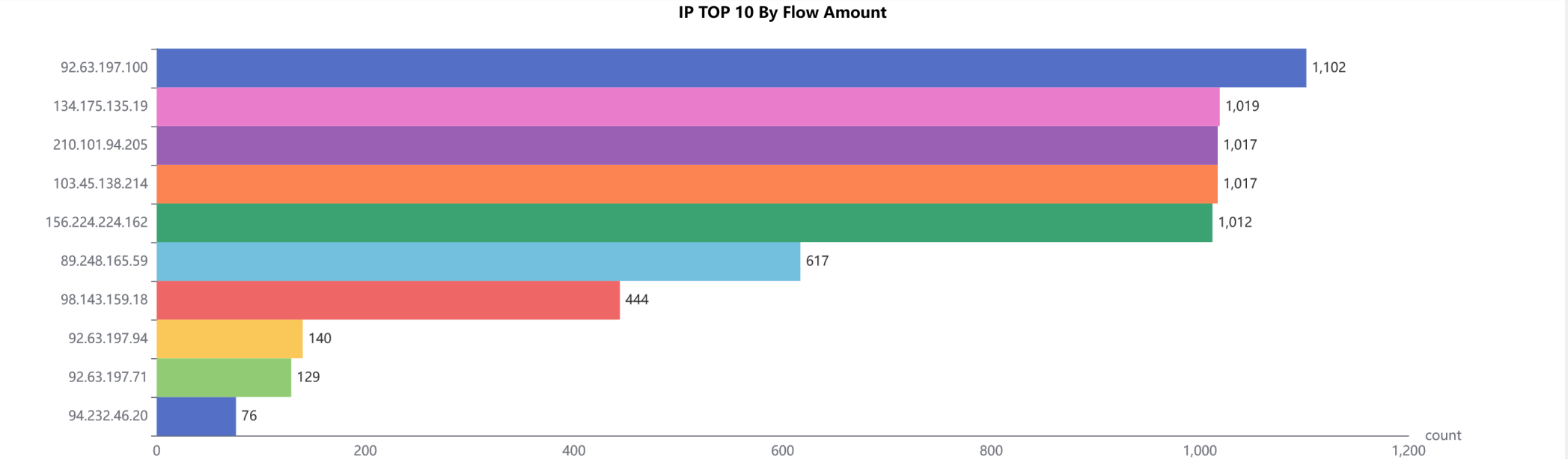




TOP 10 IP

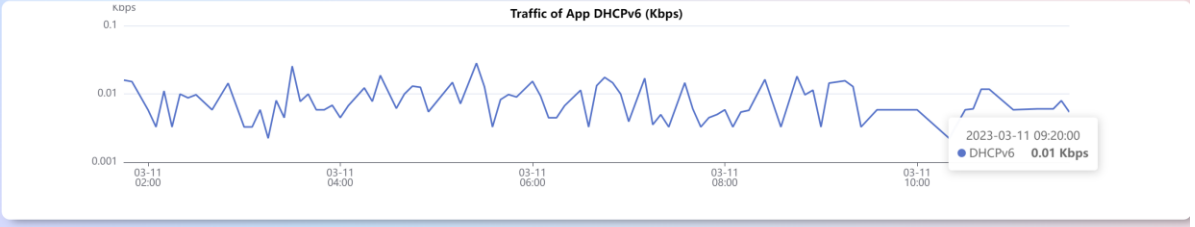

IP TOP 10 By Bytes
K Bytes
92.63.197.100 8,276.4473
89.248.165.59 4,121.3613
103.45.138.214 2,610.1133
98.143.159.18 2,326.7012
156.224.224.162 1,528.6289
134.175.135.19 1,503.2617
210.101.94.205 1,394.6172
92.63.197.71 956.8828
94.232.46.20 627.4355
92.63.197.94 331.7676

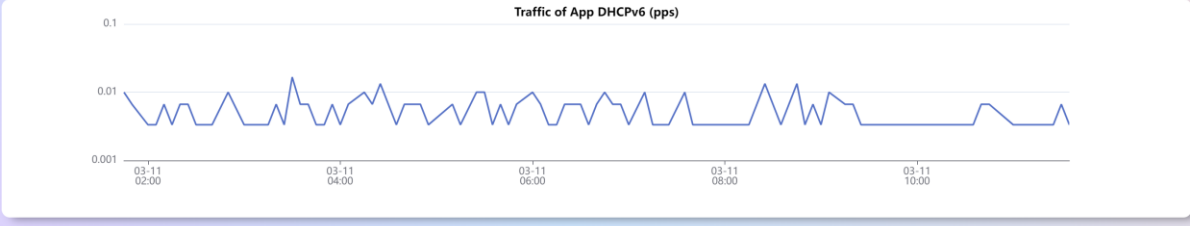

IP TOP 10 By Packets
K Packets
92.63.197.100 141.239
89.248.165.59 70.326
103.45.138.214 44.538
98.143.159.18 39.706
156.224.224.162 21.149
134.175.135.19 20.804
210.101.94.205 19.294
92.63.197.71 16.328
94.232.46.20 10.708
92.63.197.94 5.661


IP TOP 10 By Flow Amount
92.63.197.100 1,102
134.175.135.19 1,019
210.101.94.205 1,017
103.45.138.214 1,017
156.224.224.162 1,012
89.248.165.59 617
98.143.159.18 444
92.63.197.94 140
92.63.197.71 129
94.232.46.20 76
0
200
400
600
800
1,000
1,200
count

Detail of Application

GMT+8 | 2023-03-11 11:43:01 | Last 10 Hours | DHCPv6





	Client IP	Flow Amount	Packet	Byte	Client to Server Packets	Client to Server Bytes	Server to Client Packets	Server to Client Bytes
1	2001:250:1e03:12::1	29	32	7,196	0	0	32	7,196
2	2001:da8:5000:440b::4321	34	36	5,052	1	136	35	4,916

App Name	Flow Amount	Packet	Byte	Client to Server Packets	Client to Server Bytes	Server to Client Packets	Server to Client Bytes
Unknown	79,671,262	404,375,915	325,154,832,723	150,388,395	146,071,958,770	253,987,520	179,082,873,953
HTTPS	46,734,483	341,152,151	323,457,986,096	131,683,047	138,337,456,479	209,469,104	185,120,529,617
HTTP	9,593,061	56,535,016	49,636,307,557	21,585,427	19,033,288,587	34,949,589	30,603,018,970
DNS	11,761,847	11,939,761	2,127,762,173	95,220	24,595,298	11,844,541	2,103,166,875
NTP	671,172	677,719	74,441,822	2,334	258,044	675,385	74,183,778
SMTP	10,108	37,327	29,738,475	13,928	14,573,013	23,399	15,165,462
IMAP	10,342	37,757	12,405,665	13,766	6,616,229	23,991	5,789,436
GIT	474	5,726	4,809,469	2,595	2,387,729	3,131	2,421,740
POPv3	1,378	5,306	3,858,950	2,208	2,827,843	3,098	1,031,107
MySQL	7,289	10,817	2,775,345	459	92,747	10,358	2,682,598
Telnet	5,952	11,654	1,970,722	1,129	219,182	10,525	1,751,540
BGP	2,897	5,498	1,258,347	961	409,303	4,537	849,044
PostgreSQL	2,532	4,346	654,021	119	46,935	4,227	607,086

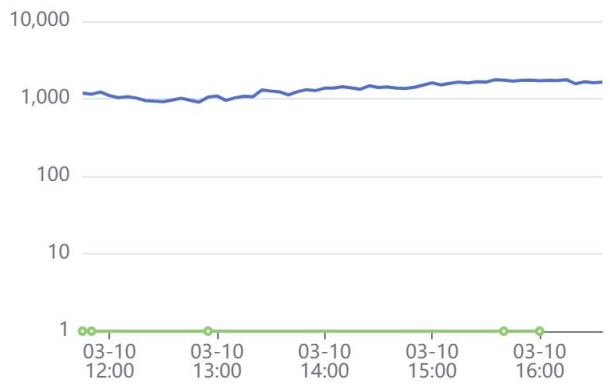
	Client IP	Flow Amount	Packet	Byte	Client to Server Packets	Client to Server Bytes	Server to Client Packets	Server to Client Bytes
1	2001:1900:2380:a07::1fe	6	10,791	11,449,329	3,574	334,278	7,217	11,115,051
2	2001:1900:2380:d03::1fe	12	4,732	4,734,608	1,691	161,345	3,041	4,573,263
3	2001:1900:2306:6f05::1fe	2	4,128	4,313,775	1,461	119,472	2,667	4,194,303
4	2001:1900:2380:e03::1fe	10	3,416	3,424,087	1,149	108,597	2,267	3,315,490
5	2001:1900:2380:e00::1fe	1	3,465	3,085,214	1,525	149,202	1,940	2,936,012
6	2001:1900:2306:4f0b::1fe	2	2,720	2,802,674	912	76,378	1,808	2,726,296
7	2001:1900:2306:8f09::1fe	1	1,481	1,619,116	478	46,252	1,003	1,572,864
8	2001:1900:2306:302d::1fe	3	1,380	1,354,882	478	44,978	902	1,309,904
9	2001:1900:230f:e00::1fe	1	1,234	1,296,958	403	38,667	831	1,258,291
10	2001:1900:2306:8f0b::1fc	2	370	339,645	144	11,881	226	327,764

‹ 1 2 3 4 5 6 ... 9 ›

Detail of IP

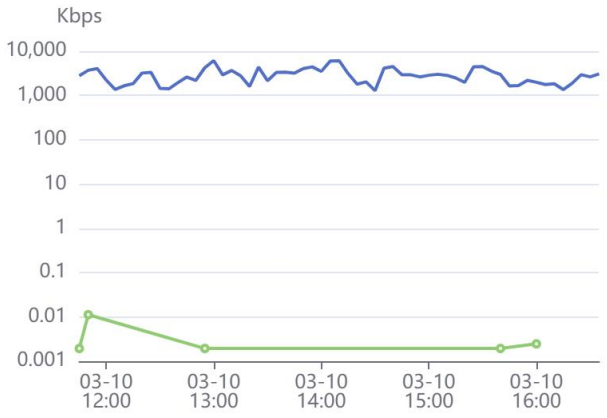
AS Server

Flow Per Second of IP 2620:1ec:8fa::8



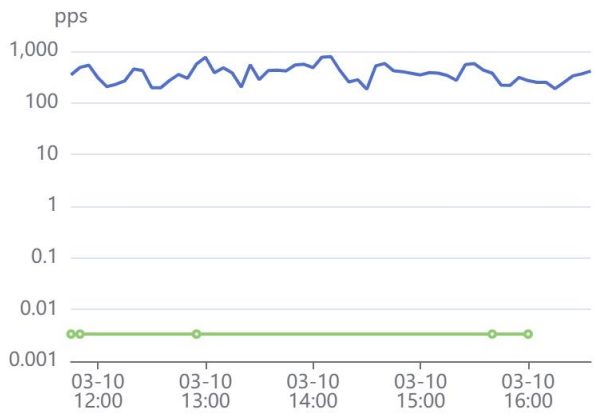
	Min	Max	Avg
HTTPS	903	1,760	1,344
HTTP	1	1	1

Traffic of IP 2620:1ec:8fa::8 (Kbps)



	Min(Kbps)	Max(Kbps)	Avg(Kbps)
HTTPS	1,314.19	6,278.56	2,995.51
HTTP	0.00	0.01	0.00

Traffic of IP 2620:1ec:8fa::8 (pps)



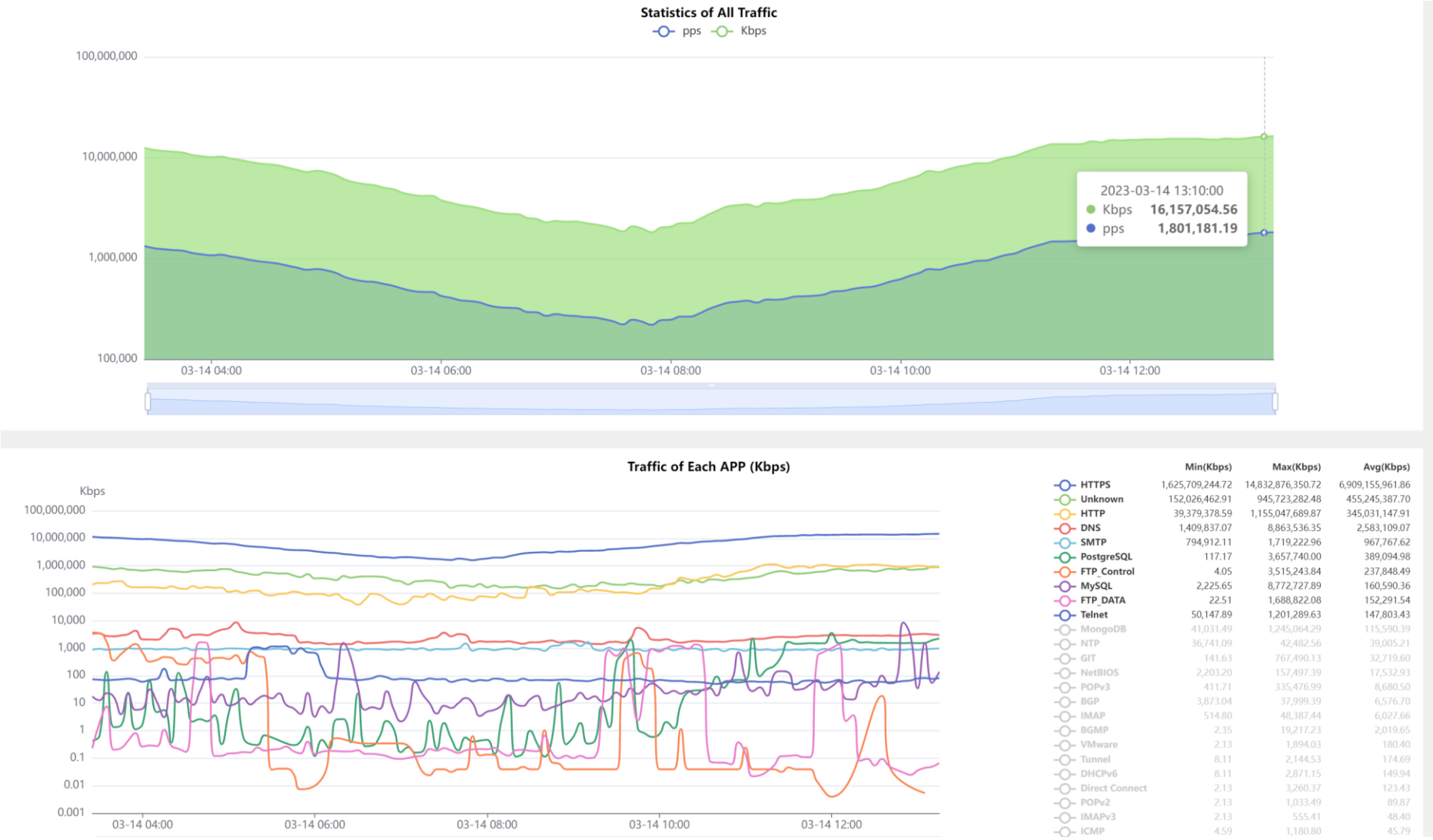
	Min(pps)	Max(pps)	Avg(pps)
HTTPS	182.87	785.64	384.65
HTTP	0.00	0.00	0.00

	IP	App	Flow Amount	Packet	Byte	Client to Server Packets	Client to Server Bytes	Server to Client Packets	Server to Client Bytes
1	2620:1ec:8fa::8	HTTPS	79,300	6,808,309	6,627,571,694	3,167,658	1,539,588,423	3,640,651	5,087,983,271
2	2620:1ec:8fa::8	HTTP	5	5	746	0	0	5	746

Detail of Flow

App	Client IP	Server IP	First Seen	Last Seen	Server Port	Client Port	Client to Server pps	Client to Server bps	Server to Client pps	Server to Clien bps
HTTPS	2620:1ec:8fa::8	2001:da8:201:1085:111c:fa9e:872c:c356	2023-03-11 01:55:10	2023-03-11 01:59:54	49938	443	17.4533	215,307.6	16.93	10,256.6933
HTTPS	2620:1ec:8fa::8	2001:da8:e000:a015::2:11be	2023-03-11 10:54:31	2023-03-11 10:58:44	64552	443	9.1133	111,848.1067	6.0167	3,592.0533
HTTPS	2620:1ec:8fa::8	2001:da8:d800:172:5440:1b02:a414:6d8	2023-03-11 01:55:24	2023-03-11 01:56:12	9555	443	8.45	103,459.4933	5.0067	3,031.7867
HTTPS	2620:1ec:8fa::8	2001:da8:d800:172:5440:1b02:a414:6d8	2023-03-11 01:55:27	2023-03-11 01:56:11	9556	443	7.8367	97,867.0933	4.9467	3,038.4
HTTPS	2620:1ec:8fa::8	2001:250:1001:a008::3:8f7b	2023-03-11 09:54:35	2023-03-11 09:59:11	1144	443	7.4533	92,274.6667	4.6567	2,824.16
HTTPS	2620:1ec:8fa::8	240c:ca02:2169:35c:a43e:c83e:e233:e4f9	2023-03-10 22:56:35	2023-03-10 22:57:02	55092	443	4.6433	58,720.24	1.9033	1,135.7333
HTTPS	2620:1ec:8fa::8	240c:c001:1007:e3b7:ad2d:2083:92e9:46ca	2023-03-10 22:55:14	2023-03-10 22:57:19	11007	443	3.0833	39,146.8267	2.79	1,795.0933
HTTPS	2620:1ec:8fa::8	240c:ca04:2101:23b:a09e:9d85:49b5:d8a	2023-03-10 12:56:53	2023-03-10 13:00:01	24938	443	2.4	30,758.2133	2.3733	1,516.3733

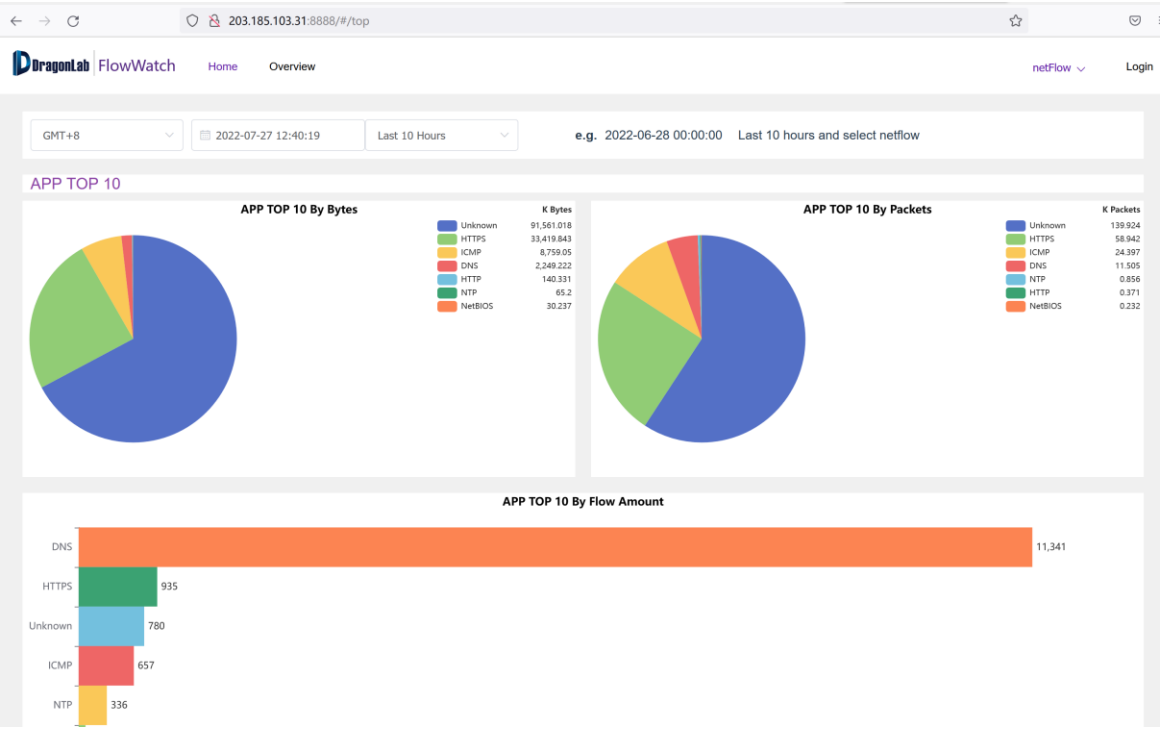
Deployed at BDREN



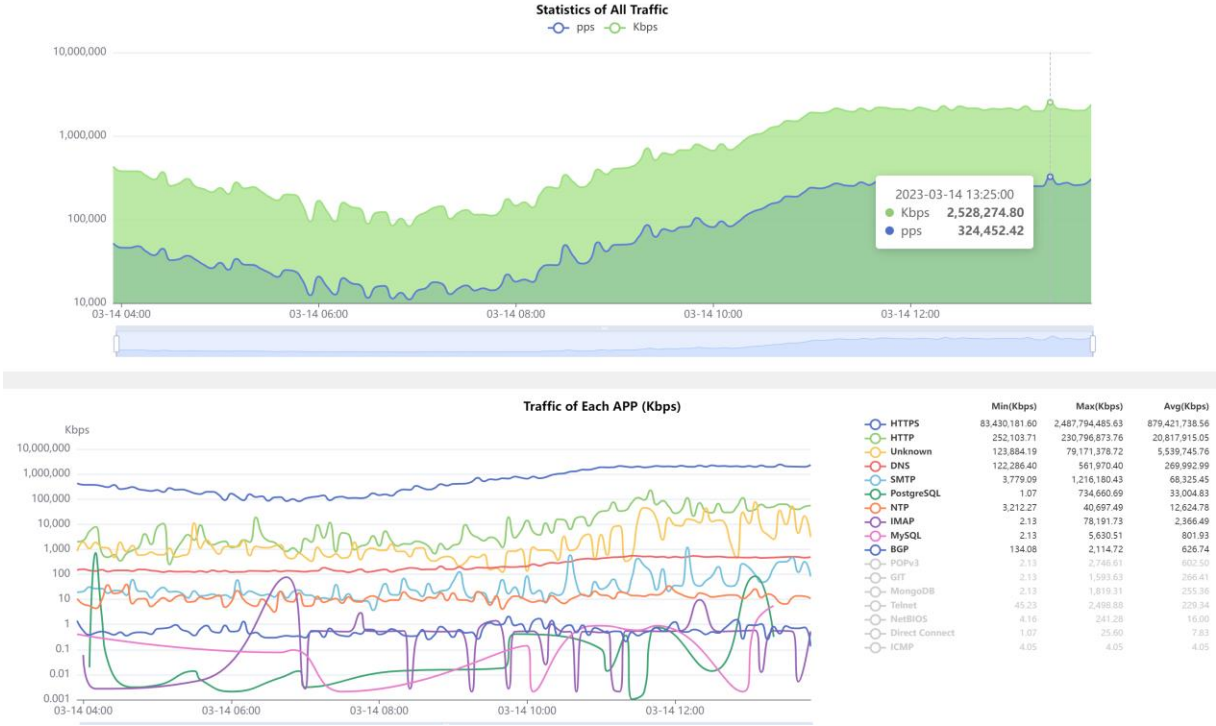
	Min(Kbps)	Max(Kbps)	Avg(Kbps)
HTTPS	1,625,709,244.72	14,832,876,350.72	6,909,155,961.86
Unknown	152,026,462.91	945,723,282.48	455,245,387.70
HTTP	39,379,378.59	1,155,047,689.87	345,031,147.91
DNS	1,409,837.07	8,863,536.35	2,583,109.07
SMTP	794,912.11	1,719,222.96	967,767.62
PostgreSQL	117.17	3,657,740.00	389,094.98
FTP_Control	4.05	3,515,243.84	237,848.49
MySQL	2,225.65	8,772,727.89	160,590.36
FTP_DATA	22.51	1,688,822.08	152,291.54
Telnet	50,147.89	1,201,289.63	147,803.43
MongoDB	41,031.49	1,245,064.29	115,590.39
NTP	36,741.09	42,482.56	39,005.21
GIT	141.63	767,490.13	32,719.60
NetBIOS	2,203.20	157,497.39	17,532.93
POPv3	411.71	335,476.99	8,680.50
BGP	3,873.04	37,999.39	6,576.70
IMAP	514.80	48,387.44	6,027.66
BGMP	2.35	19,217.23	2,019.65
VMware	2.13	1,894.03	180.40
Tunnel	8.11	2,144.53	174.69
DHCPv6	8.11	2,871.15	149.94
Direct Connect	2.13	3,260.37	123.43
POPv2	2.13	1,033.49	89.87
IMAPv3	2.13	555.41	48.40
ICMP	4.59	1,180.80	45.79

BDREN, throughput reaches 10Gbps

Deployed at ThaiREN and LEARN



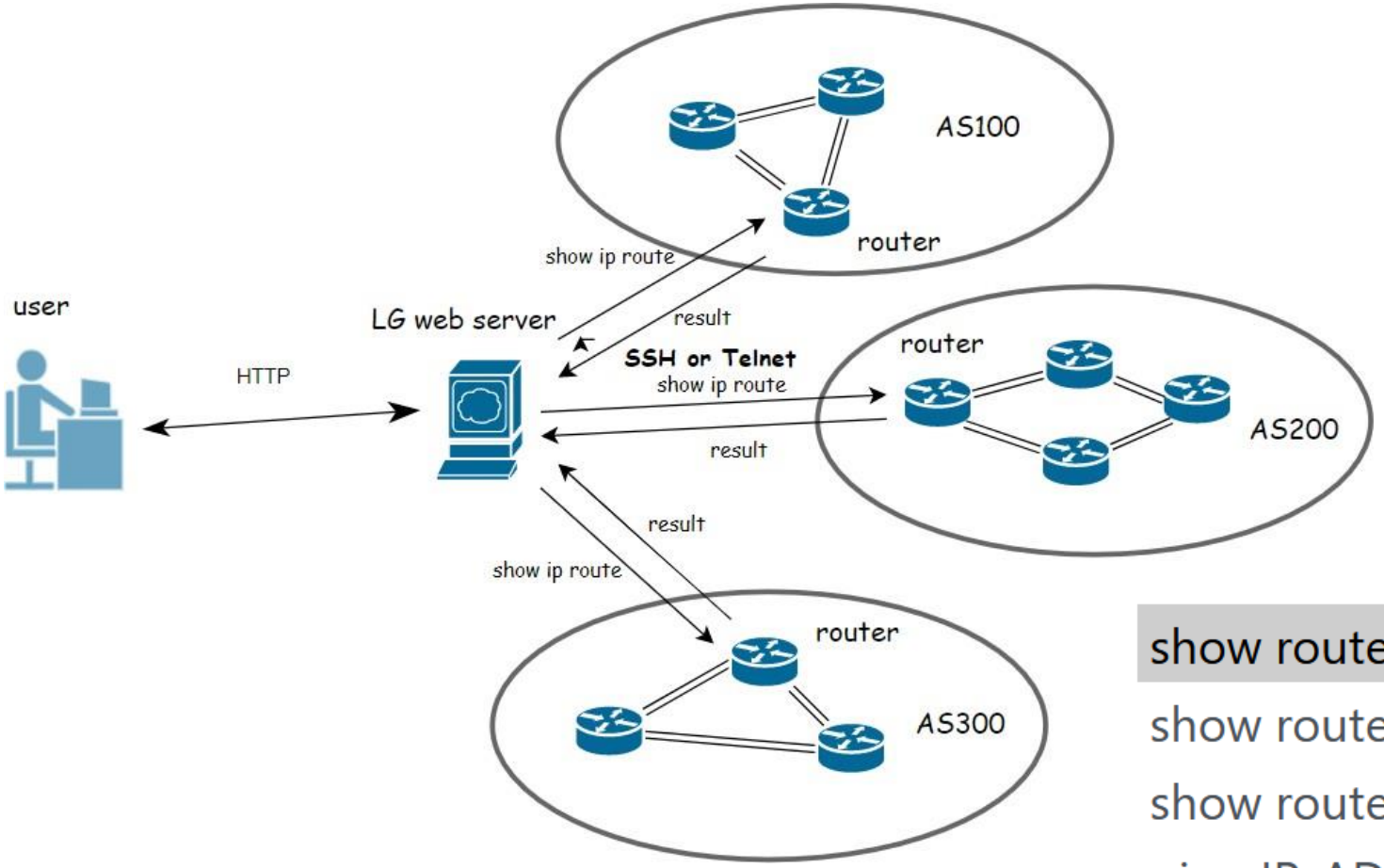
ThaiREN



LEARN

Network Looking Glass—CGTF LG

Looking Glass Architecture



show route IP_ADDRESS

show route as-path-regex AS_PATH_REGEX

show route ^AS

ping IP_ADDRESS|HOSTNAME

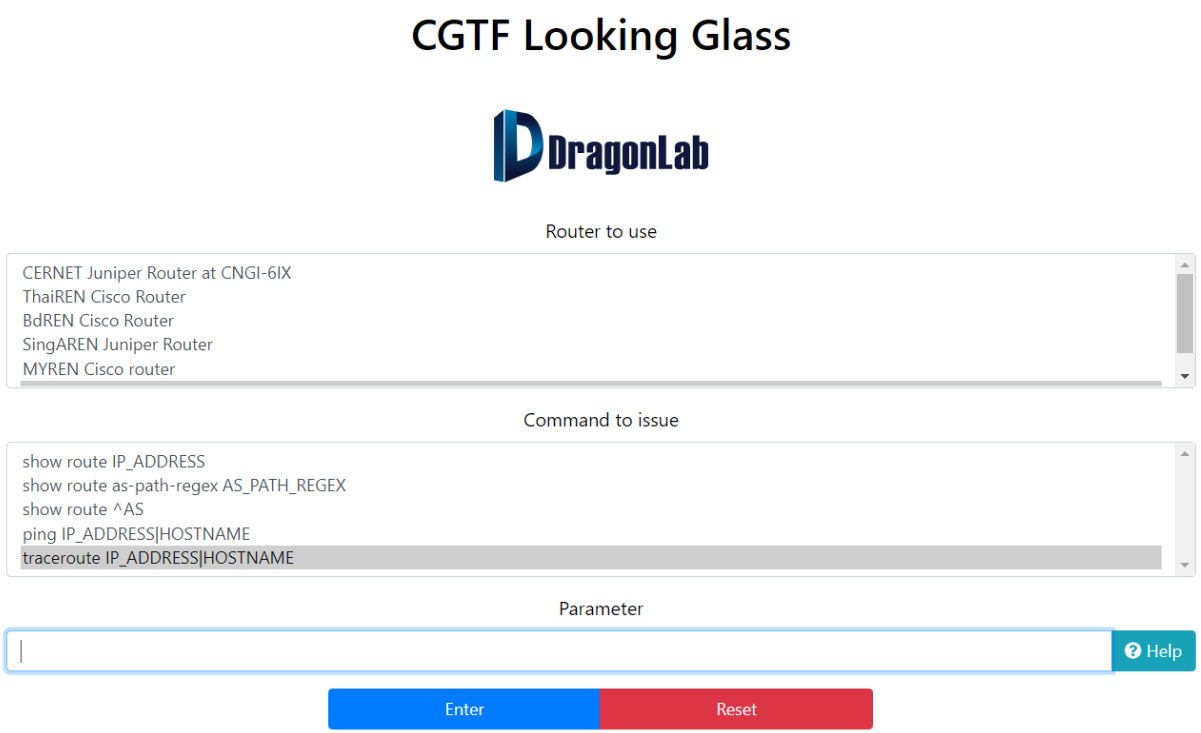
traceroute IP_ADDRESS|HOSTNAME

CGTF Looking Glass

https://lg.cgtf.net

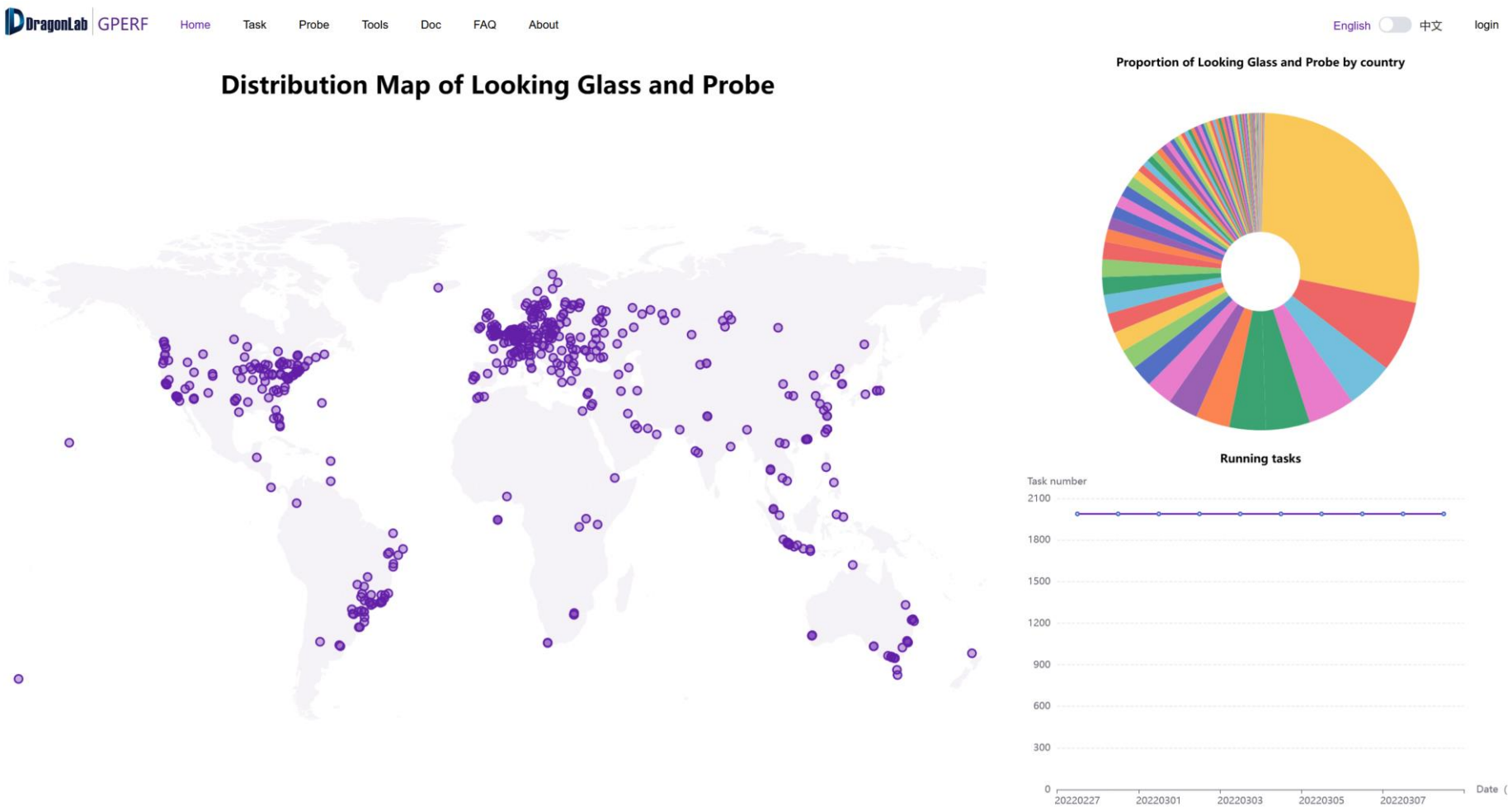
- Open Source:
  - https://github.com/gmazoyer/looking-glas
- 5 commands
- Query speed limit for security
- More partners is welcomed

show route IP_ADDRESS
show route as-path-regex AS_PATH_REGEX
show route ^AS
ping IP_ADDRESS|HOSTNAME
traceroute IP_ADDRESS|HOSTNAME



- 7 Education & Research network joined

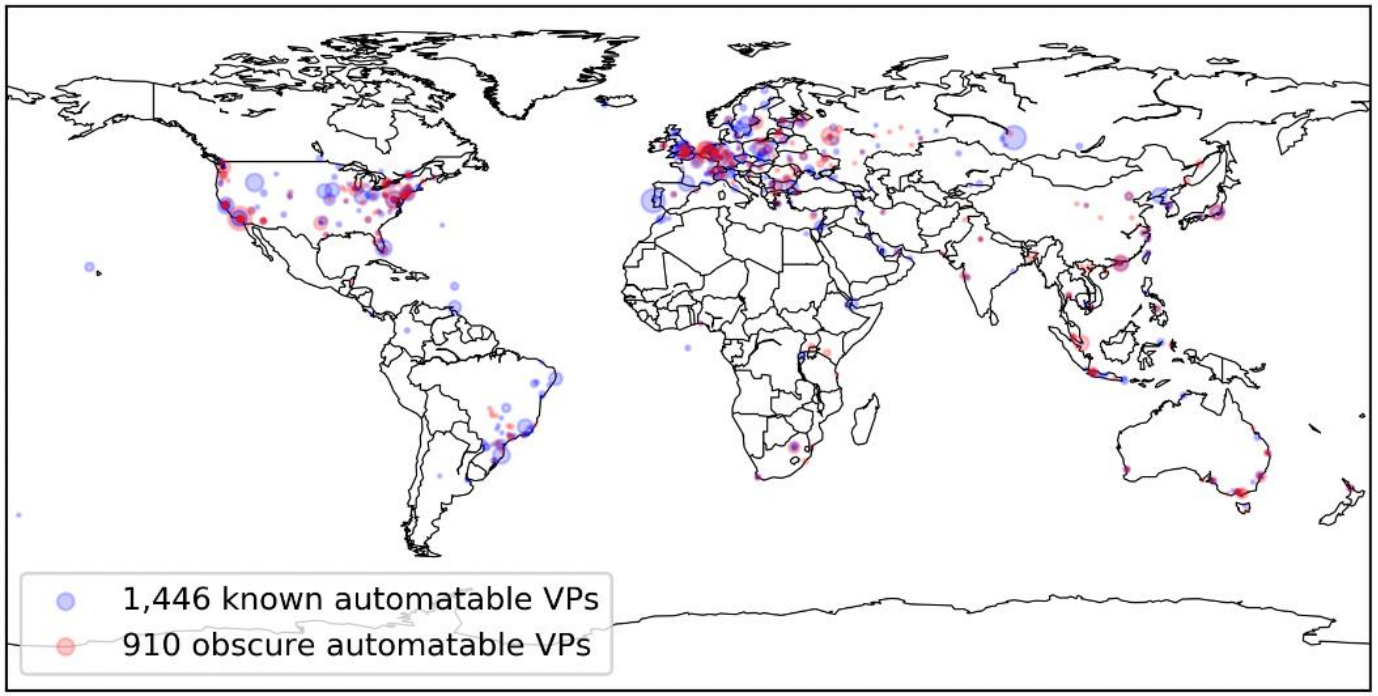
Our Work on LG



- **Paper: "Discovering obscure looking glass sites on the web to facilitate internet measurement research"——CoNEXT'21**
- 2500 LGs

Obscure Looking Glass Sites

- 1,446 known LG VPs in 386 cities of 75 countries
- 910 obscure LG VPs in 282 cities in 55 countries



✓ The 910 obscure VPs cover **8 exclusive countries** and **160 exclusive cities,** where no known LG VPs have been found before

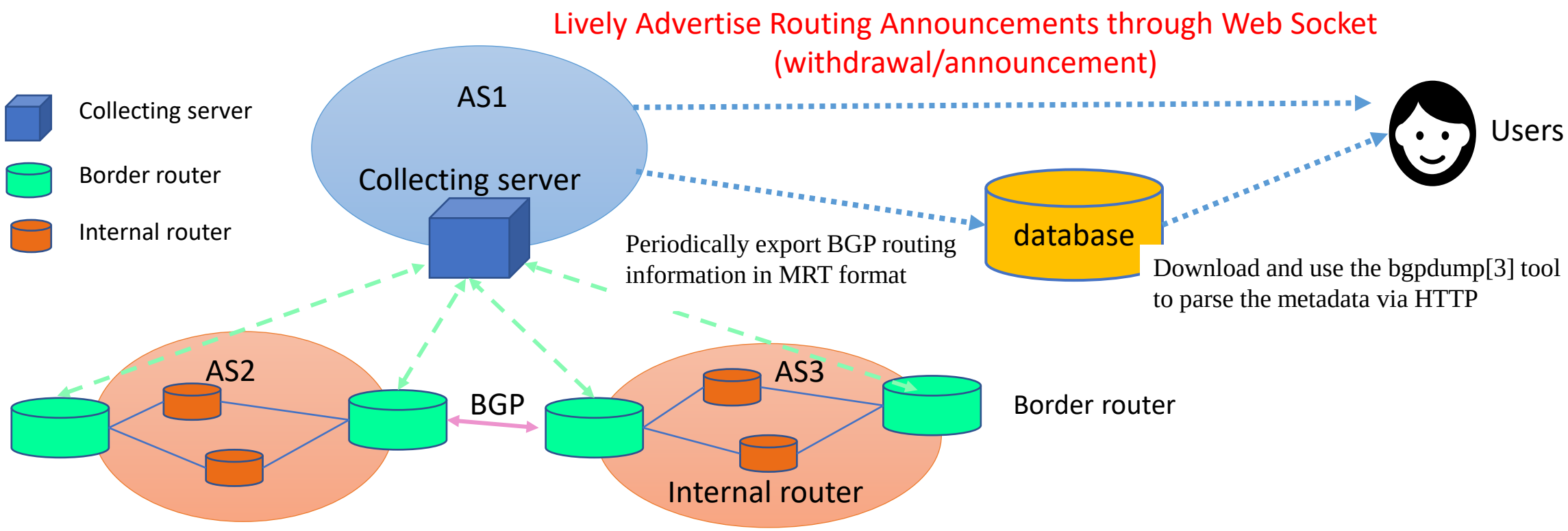
✓ The 8 countries are mainly distributed in **East Africa** and **South Asia**

https://github.com/zhuangshuying18/discover_obscure_LG

BGP Routing Sharing — CGTF RIS

BGP Routing Sharing: CGTF RIS

- Collecting server： Use routing FRR[2] to simulate a real BGP router
- Border routers: Connect with the collecting server by BGP peering
- Feature: Lively Advertise Routing Announcements



CGTF RIS

https://bgp.cgtf.net

We have established BGP session with 15 partners.
Configuration manual can be accessed at
https://www.bgper.net/index.php/document/

No.	Partner	No.	Partner
1	APAN-JP	9	MYREN
2	AARNET	10	PERN
3	BDREN	11	REANNZ
4	CERNET	12	SINGAREN
5	HARNET	13	ThaiSARN
6	ITB	14	TransPAC
7	KREONET	15	NREN
8	LEARN		

Index of /ribs/2022/07

Name	Last modified	Size	Description
rib.20220730.0600.mrt.bz2	2022-07-30 06:00	13M	
rib.20220730.0800.mrt.bz2	2022-07-30 08:00	13M	
rib.20220730.1000.mrt.bz2	2022-07-30 10:00	13M	
rib.20220730.1200.mrt.bz2	2022-07-30 12:00	13M	
rib.20220730.1400.mrt.bz2	2022-07-30 14:00	13M	
rib.20220730.1600.mrt.bz2	2022-07-30 16:00	13M	
rib.20220730.1800.mrt.bz2	2022-07-30 18:00	13M	
rib.20220730.2000.mrt.bz2	2022-07-30 20:00	13M	
rib.20220730.2200.mrt.bz2	2022-07-30 22:00	13M	
rib.20220731.0000.mrt.bz2	2022-07-31 00:00	13M	
rib.20220731.0200.mrt.bz2	2022-07-31 02:00	13M	
rib.20220731.0400.mrt.bz2	2022-07-31 04:00	13M	
rib.20220731.0600.mrt.bz2	2022-07-31 06:00	13M	
rib.20220731.0800.mrt.bz2	2022-07-31 08:00	13M	
rib.20220731.1000.mrt.bz2	2022-07-31 10:00	13M	

CGTF RIS Collector

- Just have your border router **establish an eBGP session** with our collector:
- Our Collector ASN： 65534

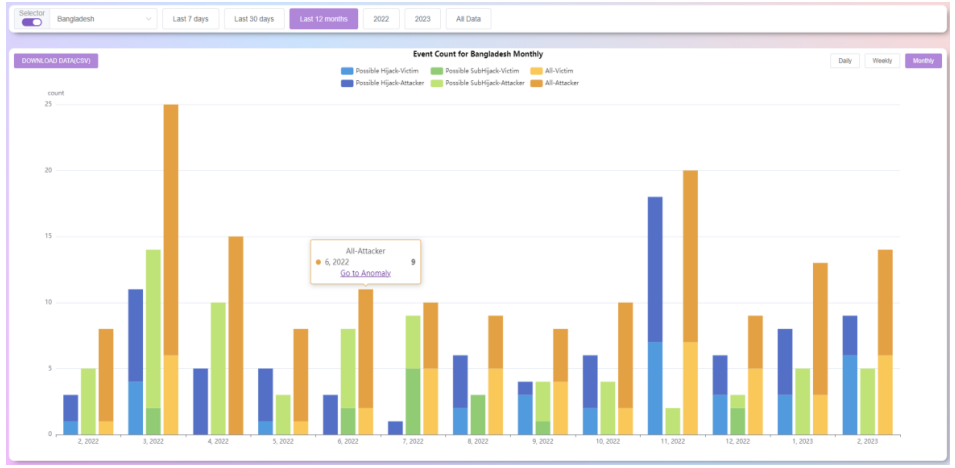
- Our Collector1 IPv4 address： 47.241.43.108
- Our Collector1 IPv6 address: 240b:4000:b:db00:8106:7413:738f:e9ed

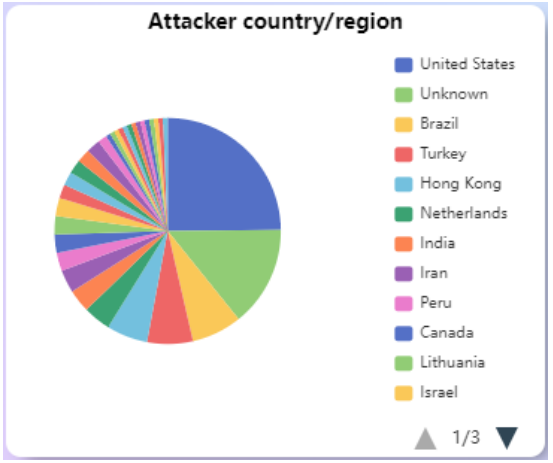
- Our Collector2 IPv4 address： 203.91.121.227
- Our Collector2 IPv6 address： 2001:da8:217:1213::227

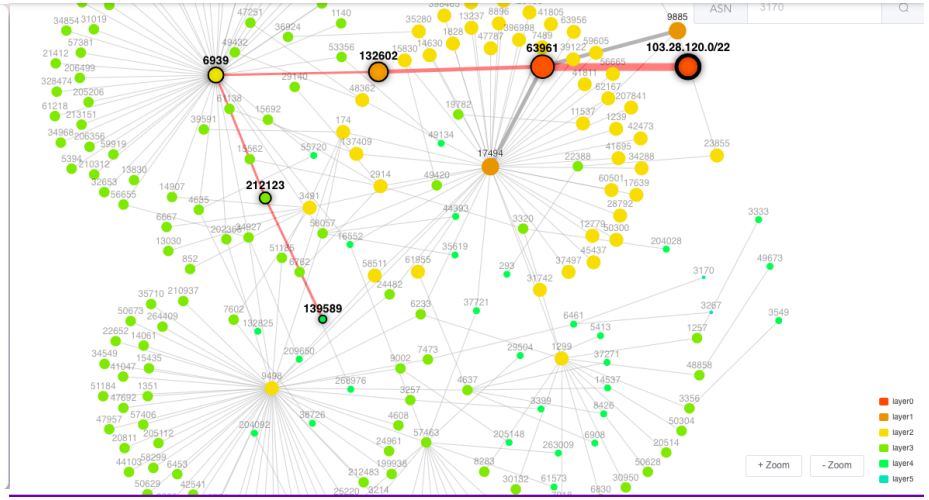
BGP Routing Monitoring and Analysis — BGPWatch

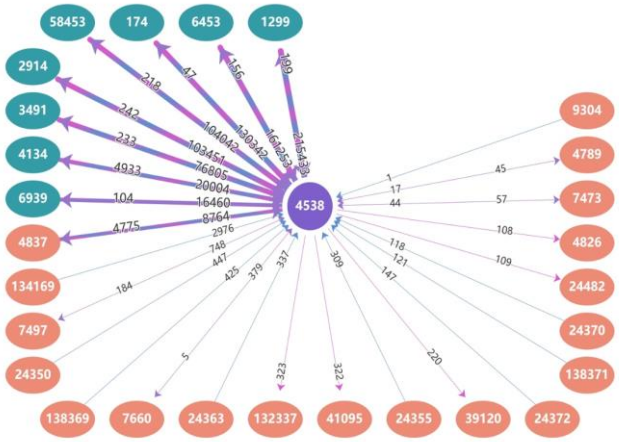
BGP Routing Monitoring and Analysis: BGPWatch

- Hijacking Detection
- Hijacking Statistics
- Dashboard:AS info
- Routing Search：
  - forward, reverse, bi-direction
- Subscribe, Alarming



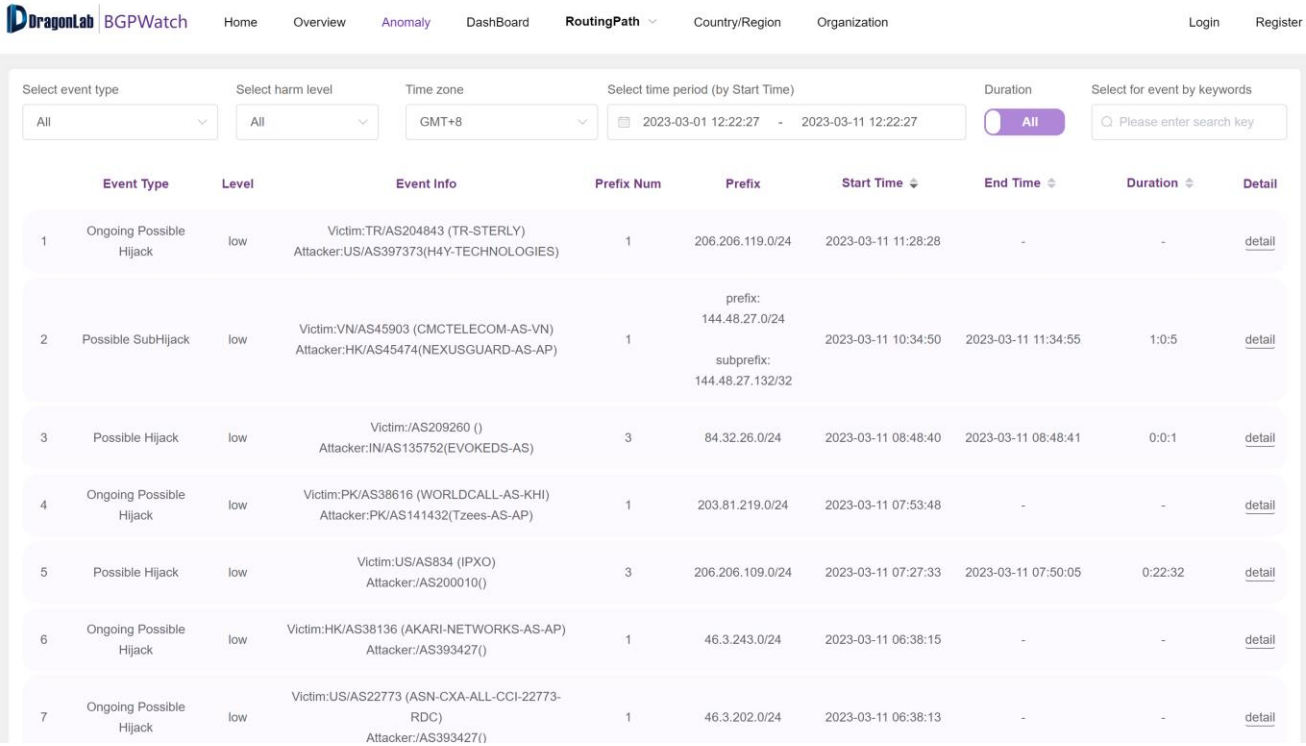






Hijacking Detection

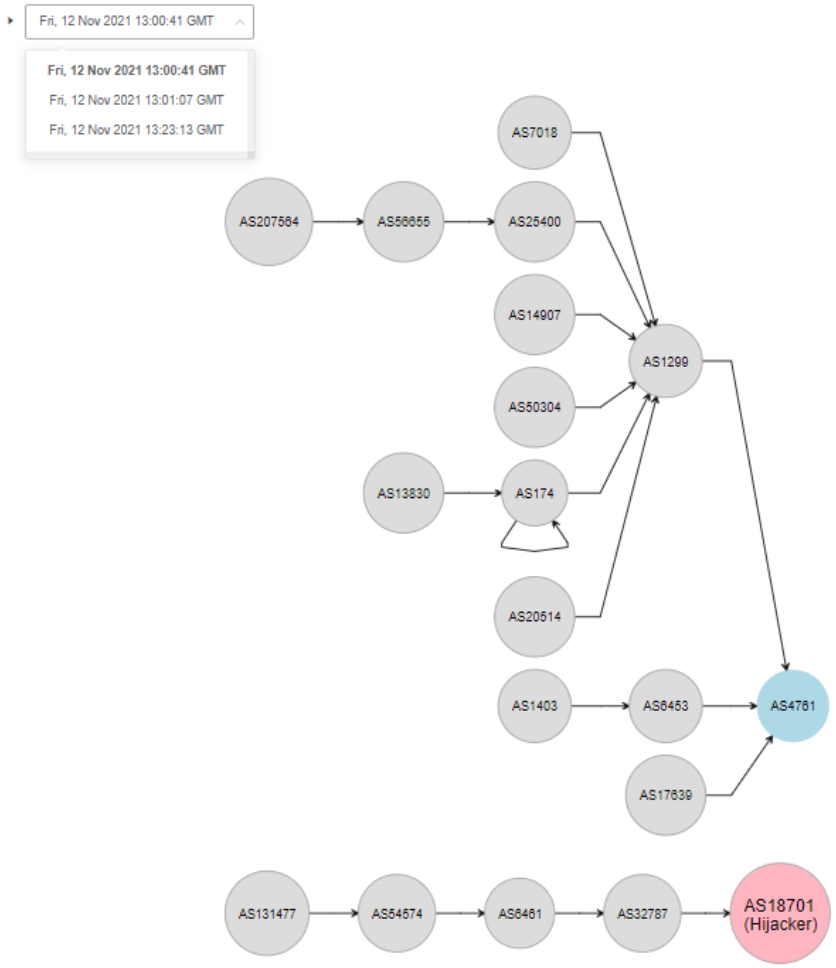
- Knowledge-based real-tIme BGP hIjacking Detection System
- Public BGP event reporting servcie
- Based on MOAS(subMOAS)
- Rely on Domain Knowledge （ROA，IRR，AS relationship etc)
- URL: https://bgpwatch.cgtf.net



	Event Type	Level	Event Info	Prefix Num	Prefix	Start Time	End Time	Duration	Detail
1	Ongoing Possible Hijack	low	Victim:TR/AS204843 (TR-STERLY) Attacker:US/AS397373(H4Y-TECHNOLOGIES)	1	206.206.119.0/24	2023-03-11 11:28:28	-	-	detail
2	Possible SubHijack	low	Victim:VN/AS45903 (CMCTELECOM-AS-VN) Attacker:HK/AS45474(NEXUSGUARD-AS-AP)	1	prefix: 144.48.27.0/24 subprefix: 144.48.27.132/32	2023-03-11 10:34:50	2023-03-11 11:34:55	1:0:5	detail
3	Possible Hijack	low	Victim:/AS209260 () Attacker:IN/AS135752(EVOKEDS-AS)	3	84.32.26.0/24	2023-03-11 08:48:40	2023-03-11 08:48:41	0:0:1	detail
4	Ongoing Possible Hijack	low	Victim:PK/AS38616 (WORLDCALL-AS-KHI) Attacker:PK/AS141432(Tzees-AS-AP)	1	203.81.219.0/24	2023-03-11 07:53:48	-	-	detail
5	Possible Hijack	low	Victim:US/AS834 (IPXO) Attacker:/AS200010()	3	206.206.109.0/24	2023-03-11 07:27:33	2023-03-11 07:50:05	0:22:32	detail
6	Ongoing Possible Hijack	low	Victim:HK/AS38136 (AKARI-NETWORKS-AS-AP) Attacker:/AS393427()	1	46.3.243.0/24	2023-03-11 06:38:15	-	-	detail
7	Ongoing Possible Hijack	low	Victim:US/AS22773 (ASN-CXA-ALL-CCI-22773-RDC) Attacker:/AS393427()	1	46.3.202.0/24	2023-03-11 06:38:13	-	-	detail

Features --- Quick Response, Event replay

- About 5 mins delay, much better than other systems
- Notify immediately when an event is detected, minimizing damage from hijackings
- Understanding how the BGP routing changes
- Analyze the extent of the impact of the event



Features --- Event level evaluation

- **Evaluate event impact based on importance of AS and prefix.**

DragonLab BGPWatch Home Overview Anomaly DashBoard RoutingPath Country/Region Organization Login Register

Select event type: All | Select harm level: All | Time zone: GMT+8 | Select time period (by Start Time): 2023-03-01 12:22:27 - 2023-03-11 12:22:27 | Duration: All | Select for event by keywords: Please enter search key

	Event Type	Level	Event Info	Prefix Num	Prefix	Start Time	End Time	Duration	Detail
1	Ongoing Possible Hijack	low	Victim:TR/AS204843 (TR-STERLY) Attacker:US/AS397373(H4Y-TECHNOLOGIES)	1	206.206.119.0/24	2023-03-11 11:28:28	-	-	detail
2	Possible SubHijack	low	Victim:VN/AS45903 (CMCTELECOM-AS-VN) Attacker:HK/AS45474(NEXUSGUARD-AS-AP)	1	prefix: 144.48.27.0/24 subprefix: 144.48.27.132/32	2023-03-11 10:34:50	2023-03-11 11:34:55	1:0:5	detail

middle level

Possible Hijack Events

124.156.136.0|22-0 Possible Hijack Events

Victim AS: 132203

Victim Country: CN (China)

Victim Description: TENCENT-NET-AP-CN

Start Time: 2021-11-08 17:03:38

During Time: 0:10:8

Hijacker AS: 64

Hijacker Country: US (United States)

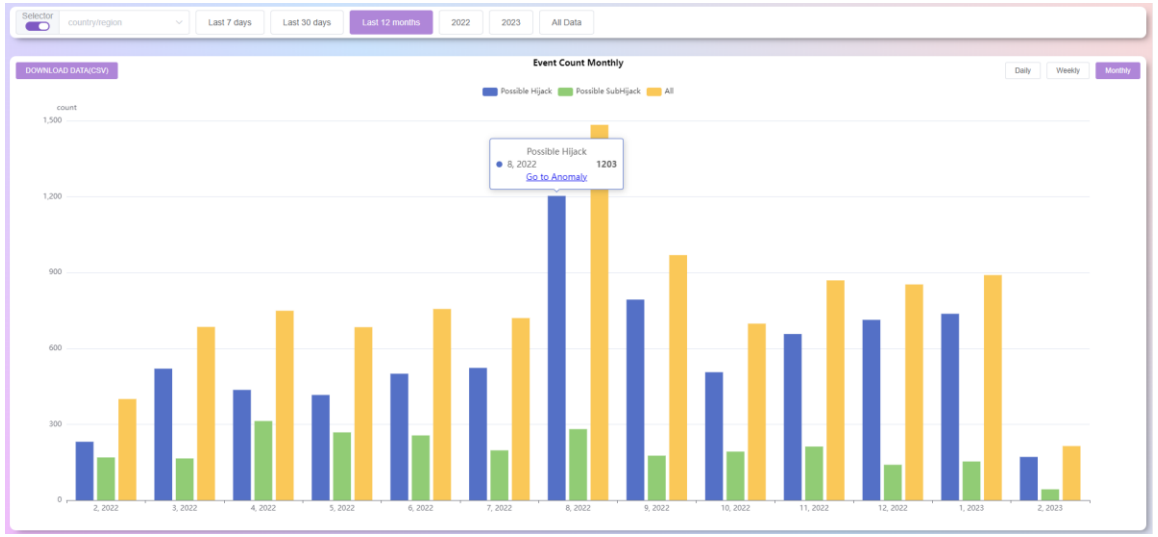
Hijacker Description: MITRE-AS-2

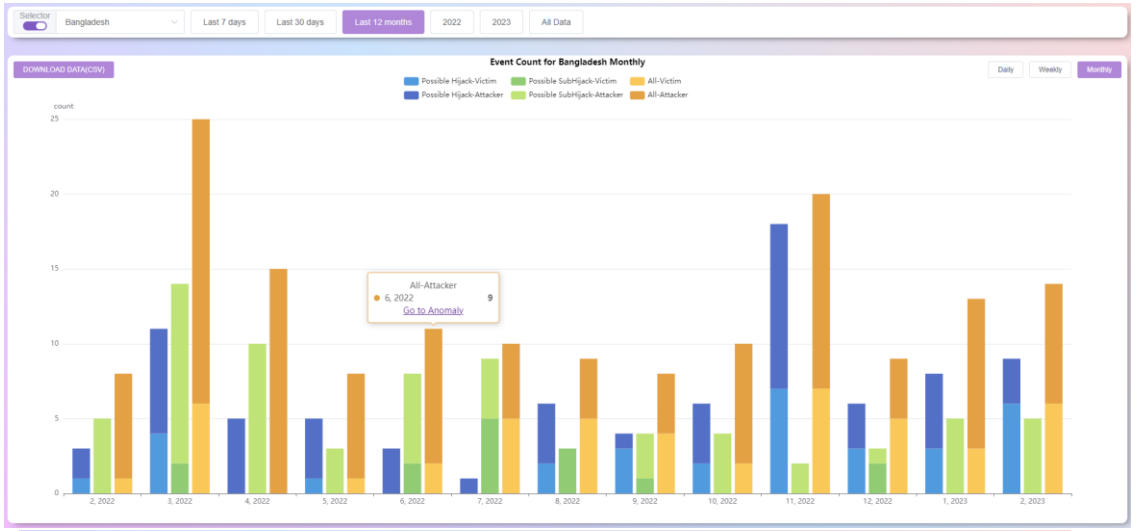
End Time: 2021-11-08 17:13:46

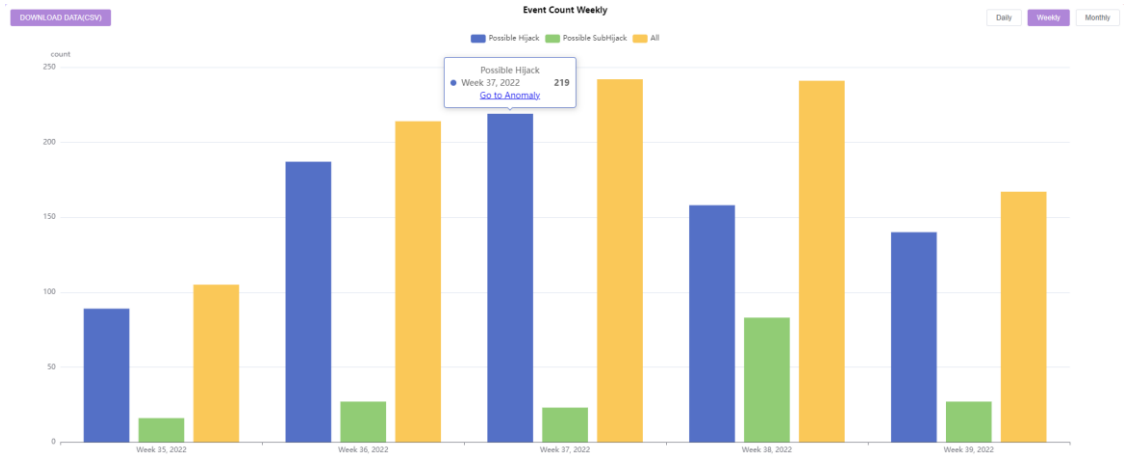
Features --- Event Statistics Analysis

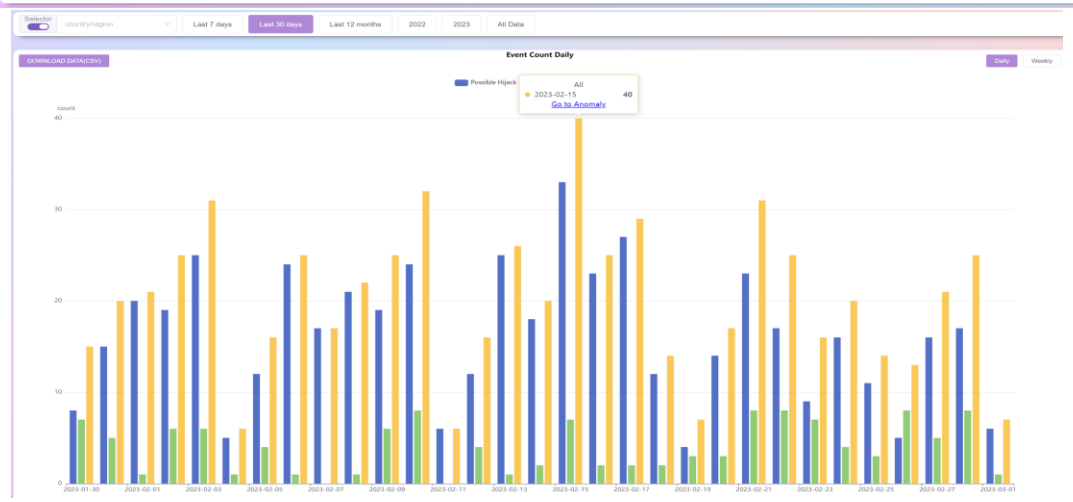
- Statistical analysis of event time,affected prefix, AS, country, etc.
- Global routing system security situational awareness

Overview---Statistics for Anomaly Events



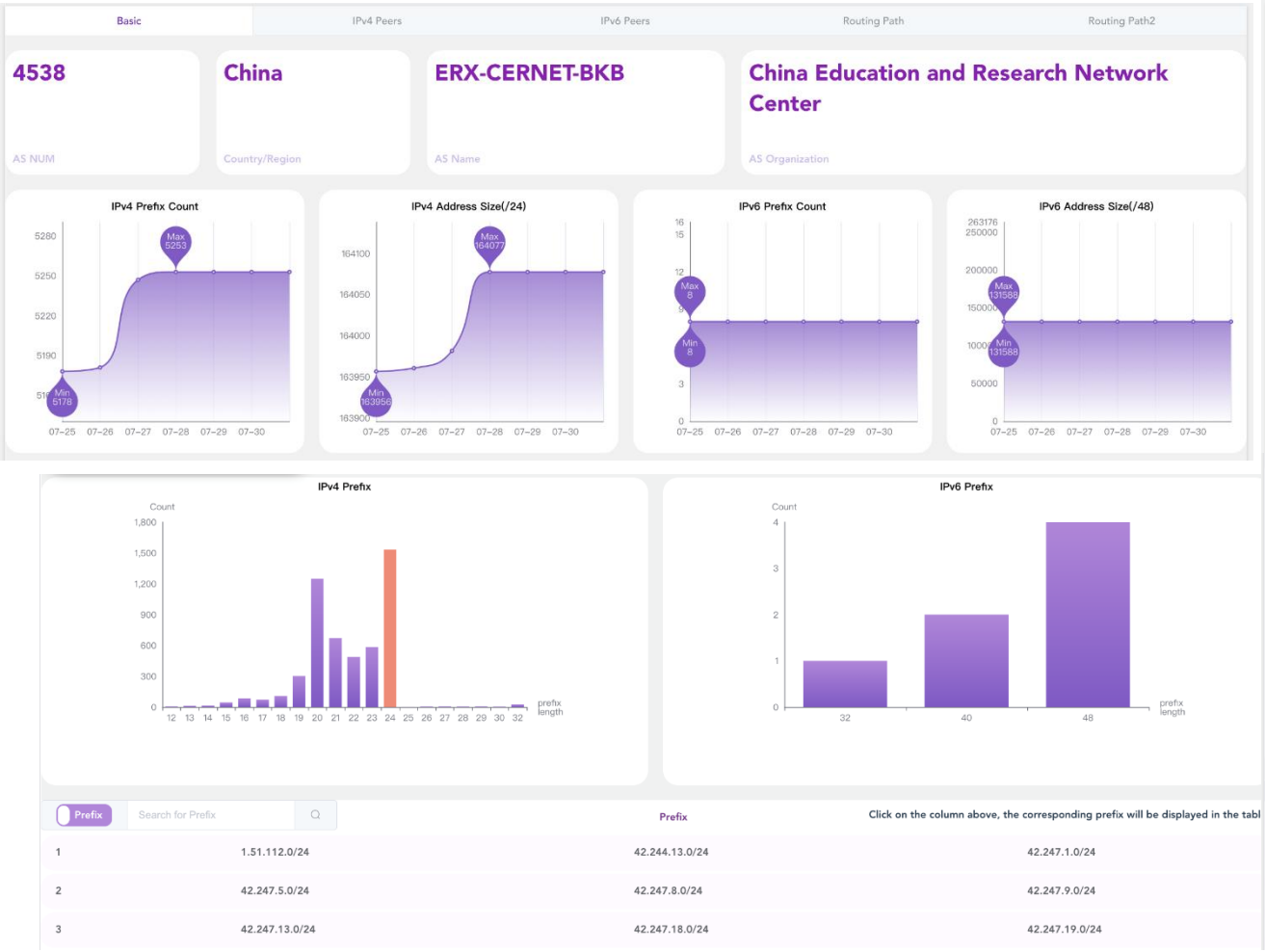


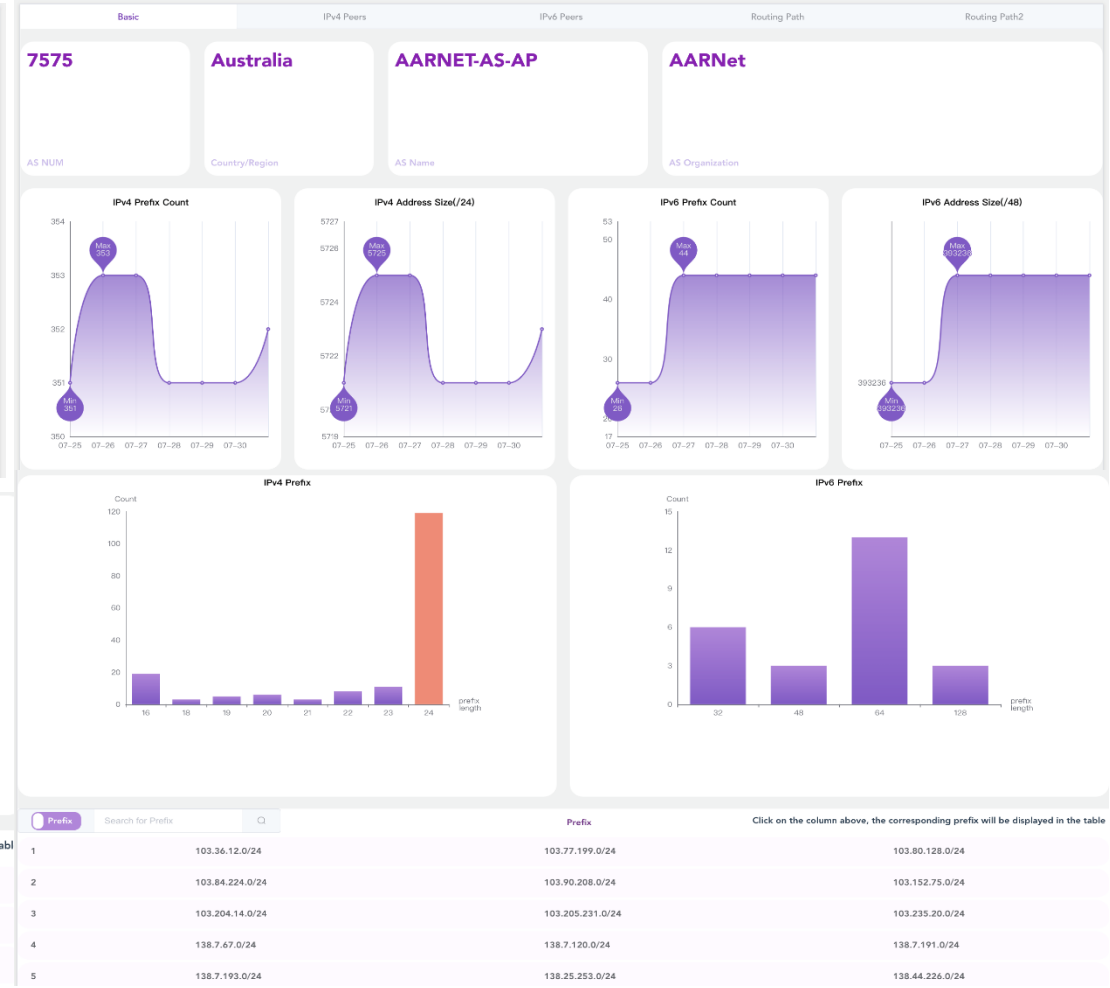




Do statistics by country/region, AS, and by yearly, monthly, weekly, and daily

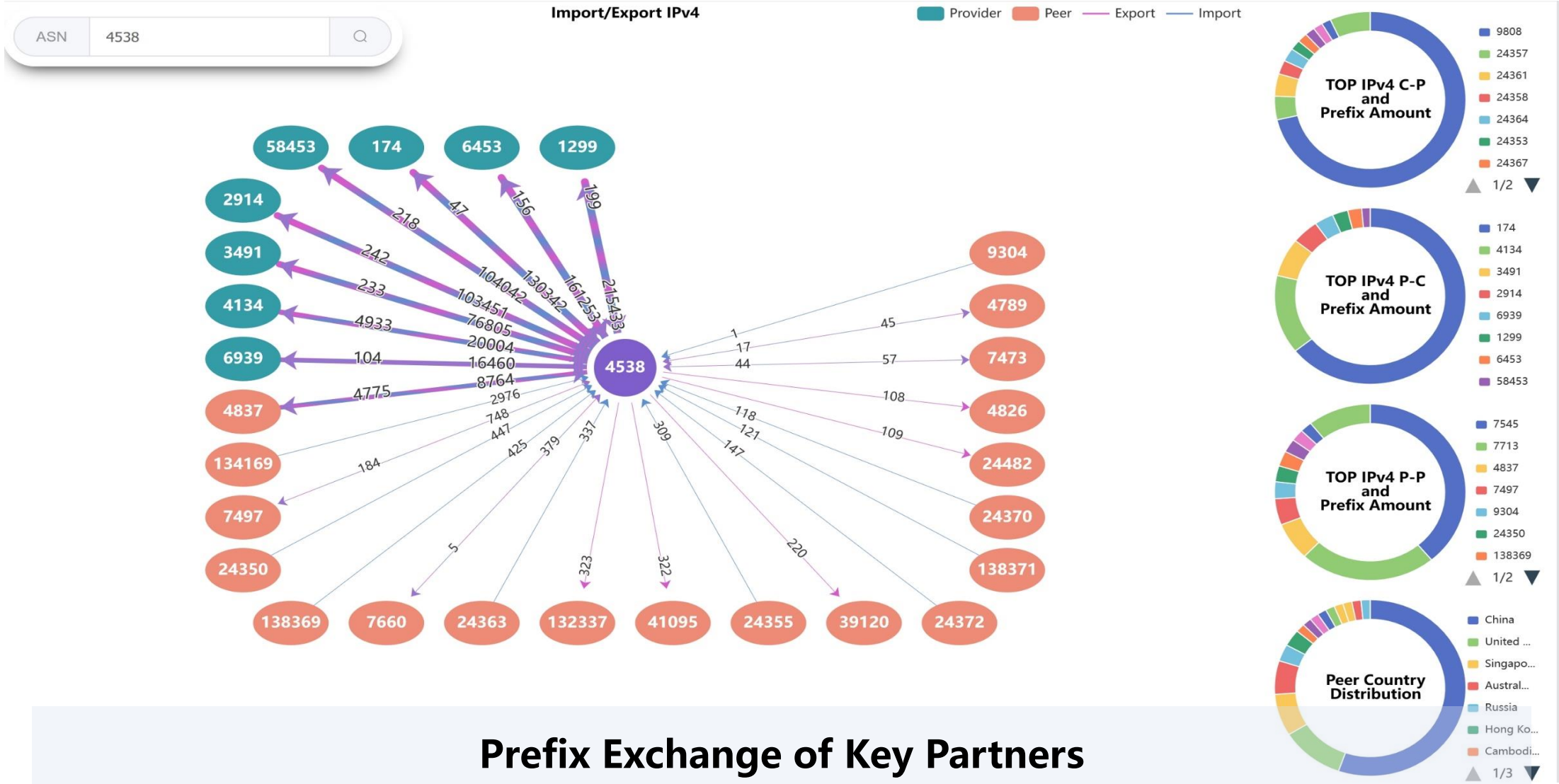
DashBoard --Basic Info





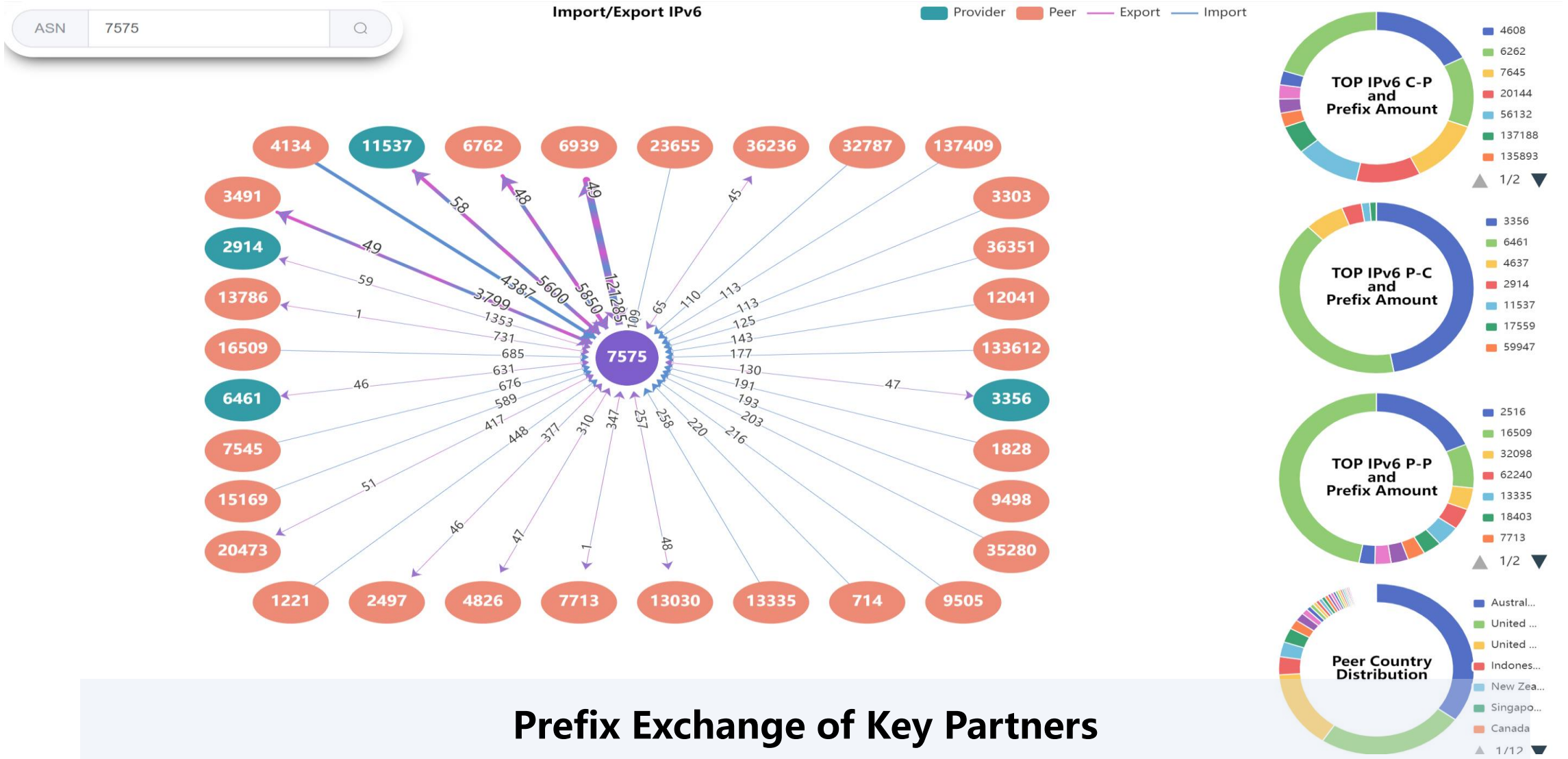
Support Prefix Searching

IPv4 Key Peers Information



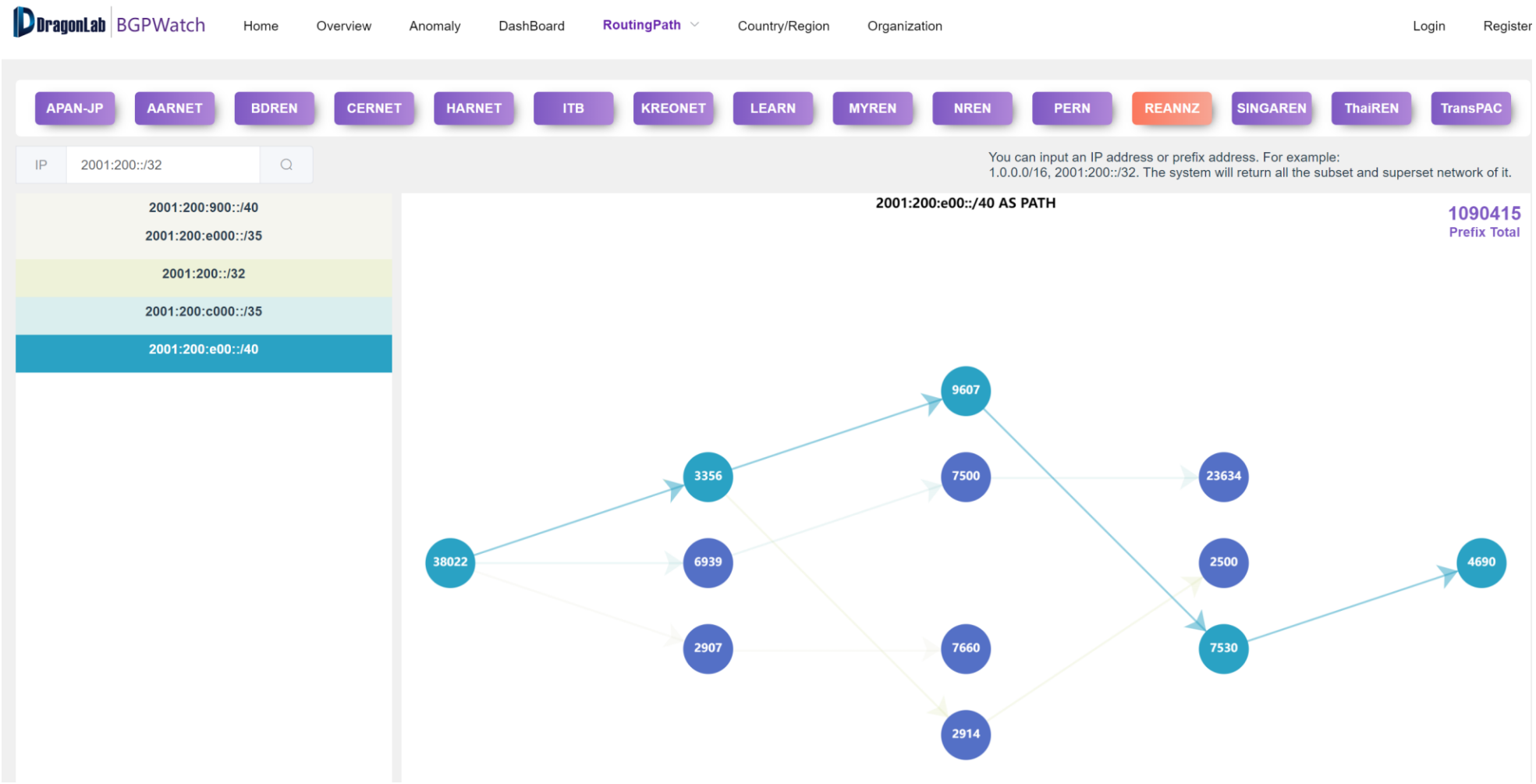
Prefix Exchange of Key Partners

IPv6 Key Peers Information



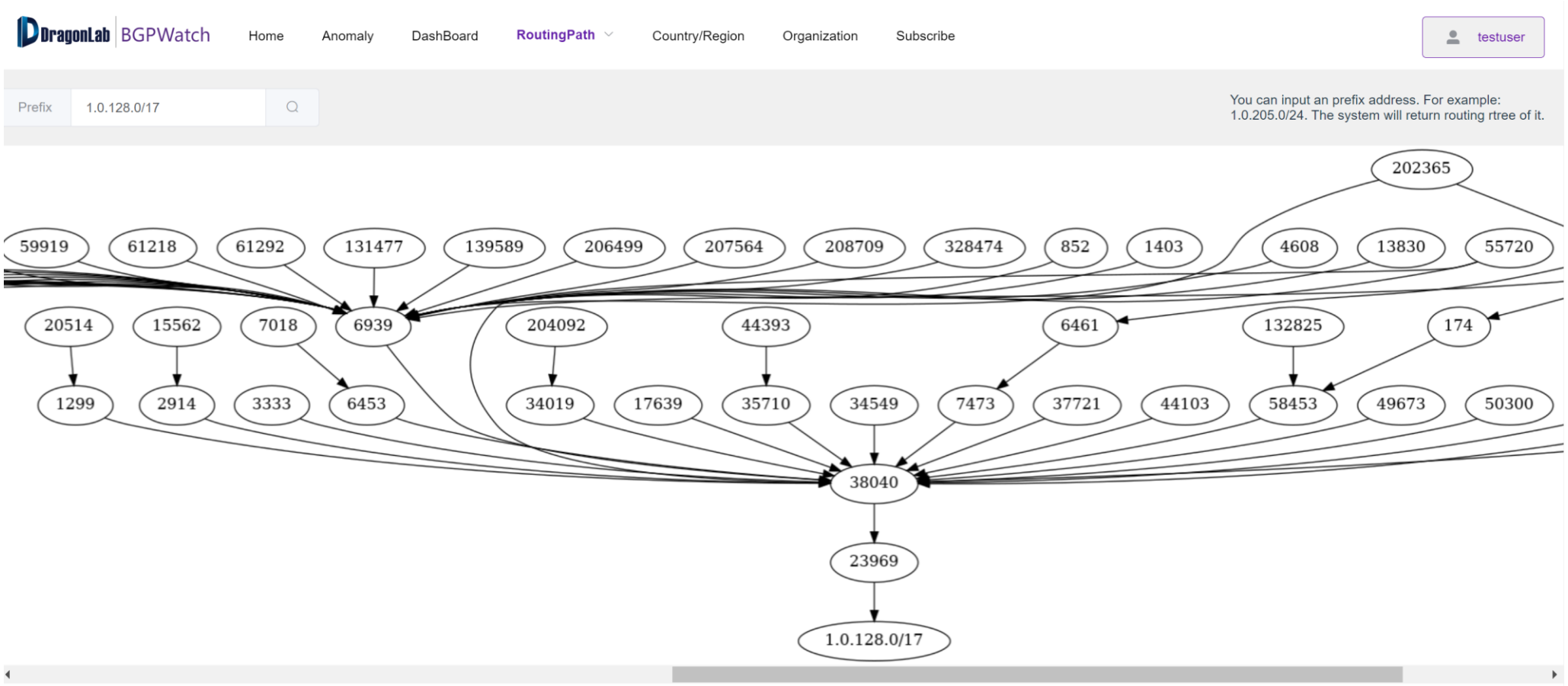
Prefix Exchange of Key Partners

Routing Path Search



Put a prefix or an IP, they can be either IPv4 or IPv6. Return paths of all sub networks and super networks of the input prefix. Group Prefixes with the same routing path.

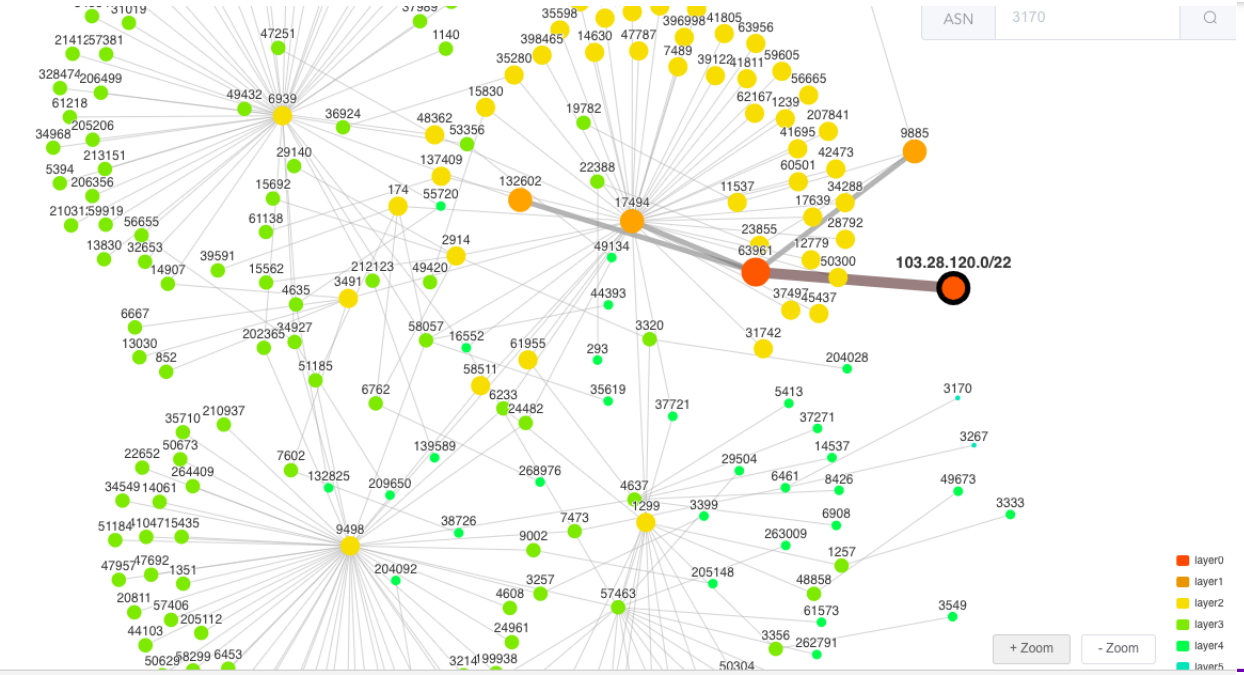
Reverse Routing Path

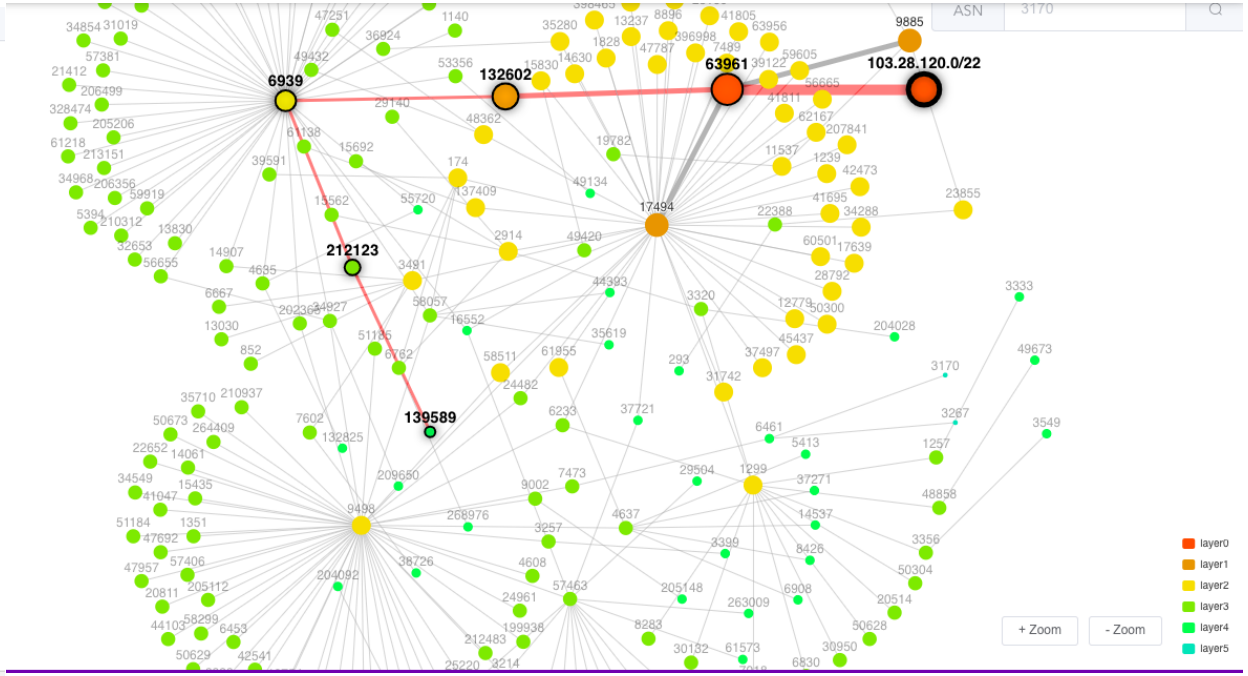


Put a prefix or an IP, they can be either IPv4 or IPv6.

The system will search the best matched prefix and return the reverse routing tree.

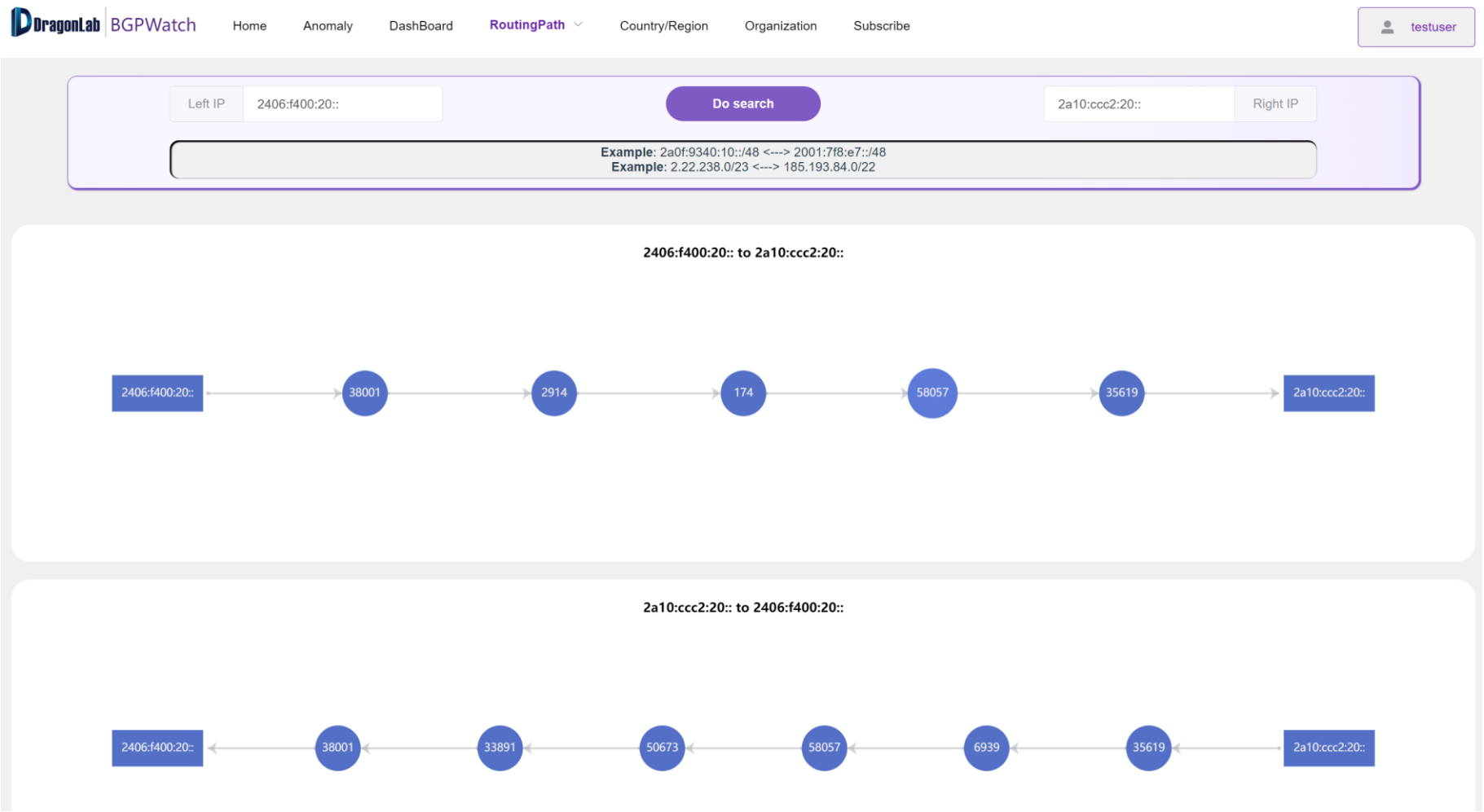
Reverse Routing Path (TOPO)





- With better interactivity
- Can display the path to an AS
- Support search
- The number of layers to display can be selected

Bi Direction Routing Path



Put a prefix or an IP, they can be either IPv4 or IPv6.

The system will search the best matched prefix and return the reverse routing tree.

Subscribe and Send Alarm Email to Subscriber

ASN
4538

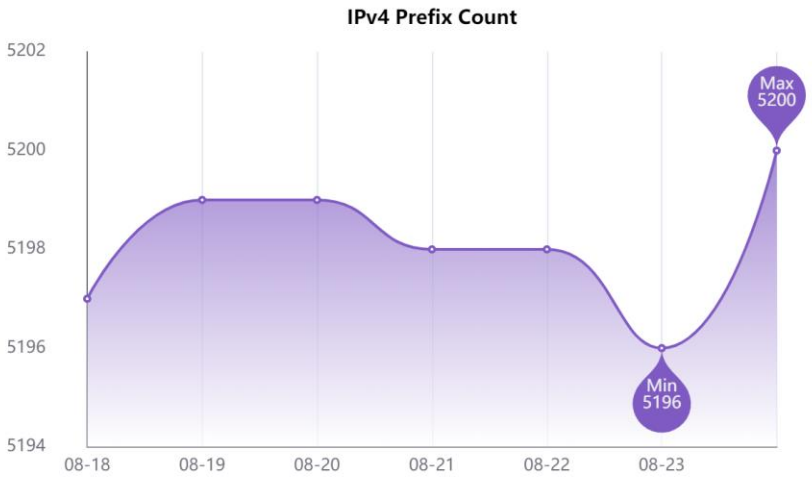
Country/Region
CN

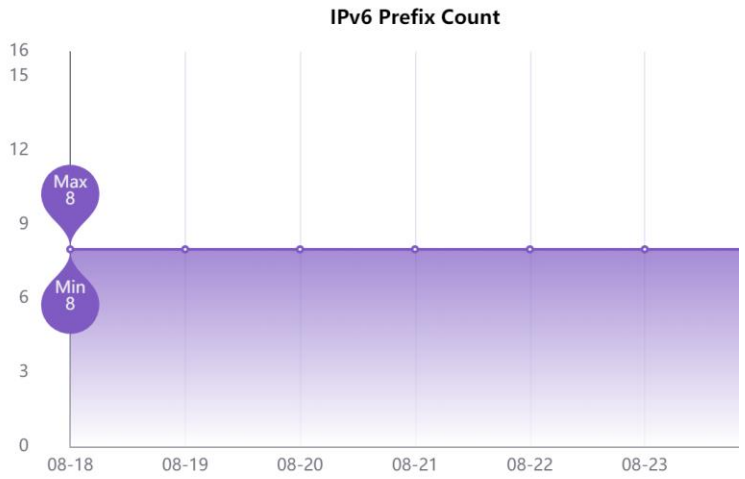
Name
ERX-CERNET-BKB

Organization
China Education and Research Network Center

Prefixes Changed
+ 4 - 0

Prefix Change





+59.64.64.0/20

+121.194.32.0/20

+211.68.32.0/20

+211.82.96.0/20

Announced prefixes changes between 2022-08-24 00:00:00 (GMT) and 2022-08-23 00:00:00 (GMT)

ASN 7575
+ 203.6.255.0/24

ASN 4538
+ 59.64.64.0/20
+ 121.194.32.0/20
+ 211.68.32.0/20
+ 211.82.96.0/20

Initiative on the New Governance Rules

Internationalizing Governance Subjects

- Strengthen the role of UN as the main channel
- Enhancing Degree of Participation of ICANN

Systematizing Governance Rules: Combining Law and Tech

- Meta-Rules
- Enforcement Rules
- Adjudication Rules
- Technical Standards

Deepening Security Cooperation Mechanisms

- Shaping "Hard and Soft Laws" under UN Framework
- Classification of Data Security Management and Cross-Border Flows
- Improving International Cooperation Mechanisms for Managing Basic Internet Resources

Promoting shared Development benefits Sharing

- Establishing a Transnational Digital Divide Management
- Improve Cooperation Mechanisms, Governance rules and technical standards

Application of New Rule System: Draft of Regional Governance Rules for IPv6 Cyberspace (Scholars' Proposal)

Table of Contents

[Highlights]

Chapter IV Network Governance Enforcement Mechanism and Credit system

Article 24 [Purpose of Network Credit System Construction]

Article 25 [Recognition of Credit Standing]

Article 26 [Credit Information Management]

Article 27 [Regional Credit Early Warning Platform]

Article 28 [Incentive to Keep Faith and Constraints on Faith Breaking]

Article 29 [Credit Repair]

Summary and Future Work

- Have done something on active probing, passive monitoring, BGP routing, looking glass
- Keep working on improving Internet security
- Welcome suggestions from internet society

Welcome more partners join the community

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