TWNIC Update

Wen Yu Chen, TWNIC

APNIC 48

Outline

- Statistics of TWNIC's IP members

- TWNIC's activities and training programs

- TWNIC RPKI Update

- Conclusions & Future Works

Statistics of TWNIC's IP Members

TWNIC

TWNIC 's Member: 282

	代理發放單位
1	
2	
3	
4	
5	
6	
7	太聯科技股份有限公司
8	遠傳電信股份有限公司
9	宏遠電訊股份有限公司
10	向邦網路科技股份有限公司
11	博訊科技股份有限公司
12	和宇寬頻網路股份有限公司
13	協志科技股份有限公司
14	新世紀資通股份有限公司
15	新
16	台
17	香
18	統
19	敦
20	台灣
21	台灣碩網網路娛樂股份有限公司

	代理發放單位
22	台灣基礎開發科技股份有限公司
23	中嘉和網股份有限公司
24	世新有線電視股份有限公司
25	台灣恩悌悌股份有限公司
26	大台北寬頻網路股份有限公司
27	易達通網路系統有限公司
28	數位通國際網路股份有限公司
29	大無畏寬頻股份有限公司
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	東壹科技股份有限公司

	代理發放單位
43	筌城有限公司
44	威達雲端電訊股份有限公司
45	安源通訊股份有限公司
46	大眾電信股份有限公司
47	大同電信股份有限公司
48	威邁思電信股份有限公司
49	全球一動股份有限公司
50	洞瀾有線電視股份有限公司

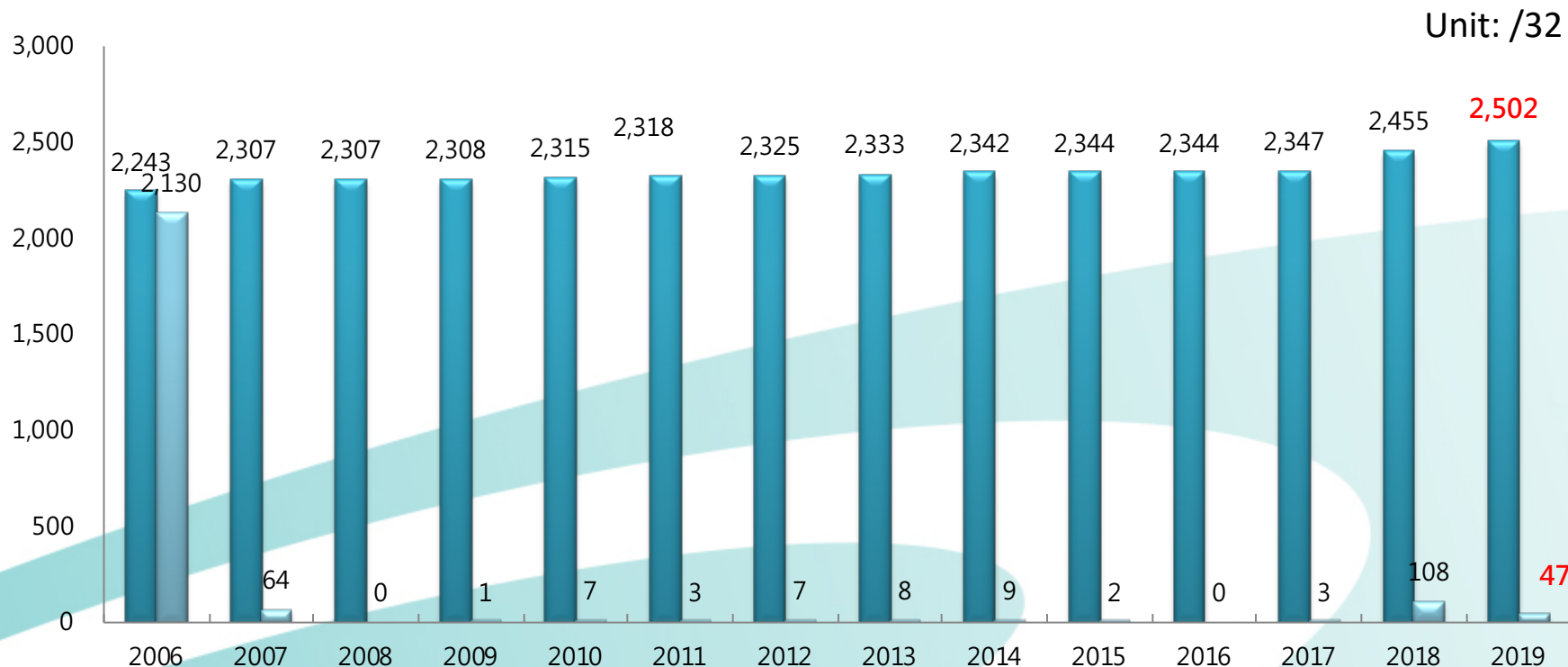| Service Types	# of TWNIC's Members
Co-location/IDC	64
FTTx	18
ADSL	4
Cable Modem	25
WLAN	2
3G/3.5G	5
4G(LTE)	5

IPv4 Address Allocation

- TWNIC has allocated 132,578 /24s IPv4 addresses

Unit: /24
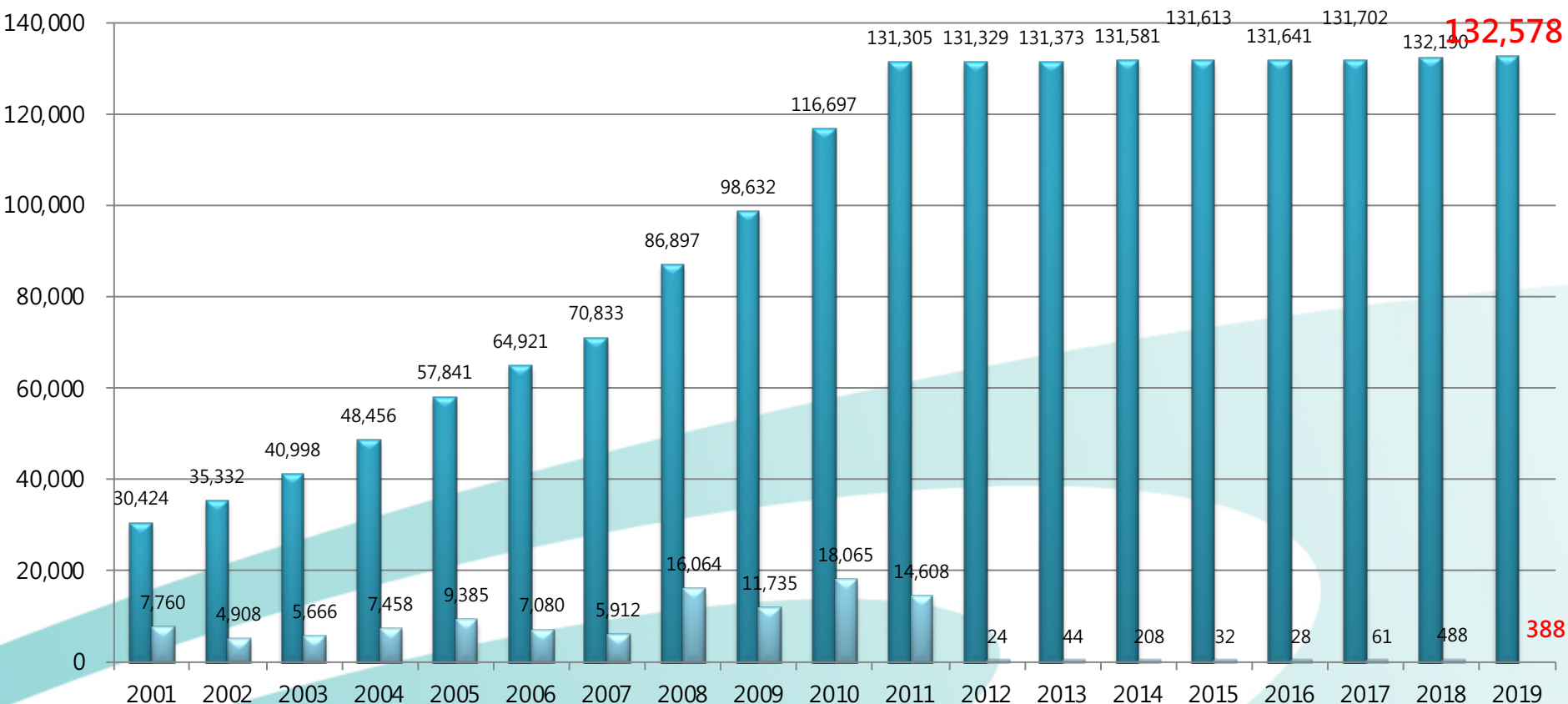
IPv6 Address Allocation

- TWNIC has allocated 2,502 /32s IPv6 addresses
- Most of TWNIC IP members have obtained IPv6 addresses.

Unit: /32

32rd TWNIC IP Open Policy Meeting

- Time: June 20, 2019
- Keynote speech:
  - **Global Routing Security and its impact on Policy Development** Aftab Siddiqui, Technical Engagement Manager, ISOC & NRO NC Chair
  - **ROA Deployment and Industry Development** Che-Hoo Cheng, Infrastructure & Development Director, APNIC
- Session topics include Cooperation SIG, Policy SIG, IPv6 Deployment SIG etc.
- To see the detail agenda, visit https://opm.twnic.net.tw/32rd/agenda.html

2019 TWNIC-APNIC Joint Training - IPv6 Workshop

- Time: May 22-24, 2019
- Attendee: 33
- Lecturer: Jessica Wei, APNIC & Shaqayeq Saleh, APNIC
- Course outline
  - Internet Fundamentals
  - IPv6 Protocol architecture and standards
  - IPv6 Enhancements to Routing Protocols
  - IPv6 addressing and address planning
  - IPv6 transition technologies
  - IPv6 deployment planning
  - Enabling IPv6 on network services (DNS, WWW)
  - IPv6 security issues

- This technical workshop, made up of lectures and hands-on lab modules, is targeted at anyone who is involved in Internet technology standards, local and national network infrastructure deployment and day to day network operations.
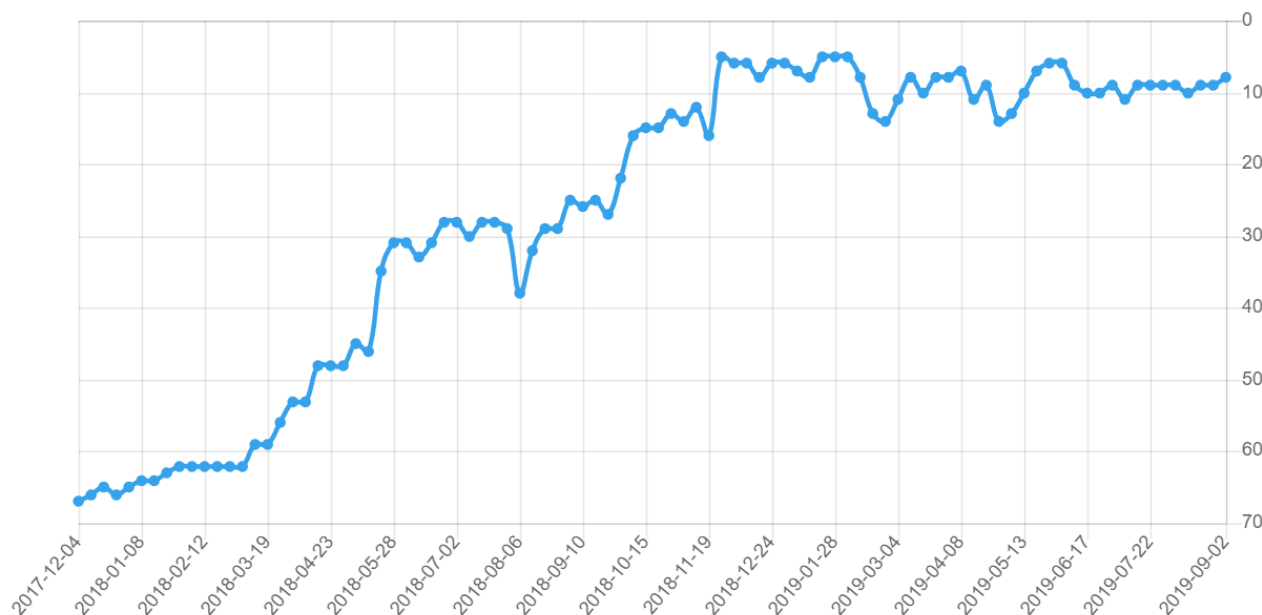
Taiwan IPv6 User Availability

- Taiwan IPv6 user availability is 0.46% in the end of 2017 and 39% in September, 2019.

Taiwan IPv6 Global Ranking: 8

2019-09-02 ——台灣全球排名：8名 (IPv6比例: 39.3%)

Data derived from APNIC by measuring mean value of IPv6 Capable over the last 7 days.   **Top 30 List**
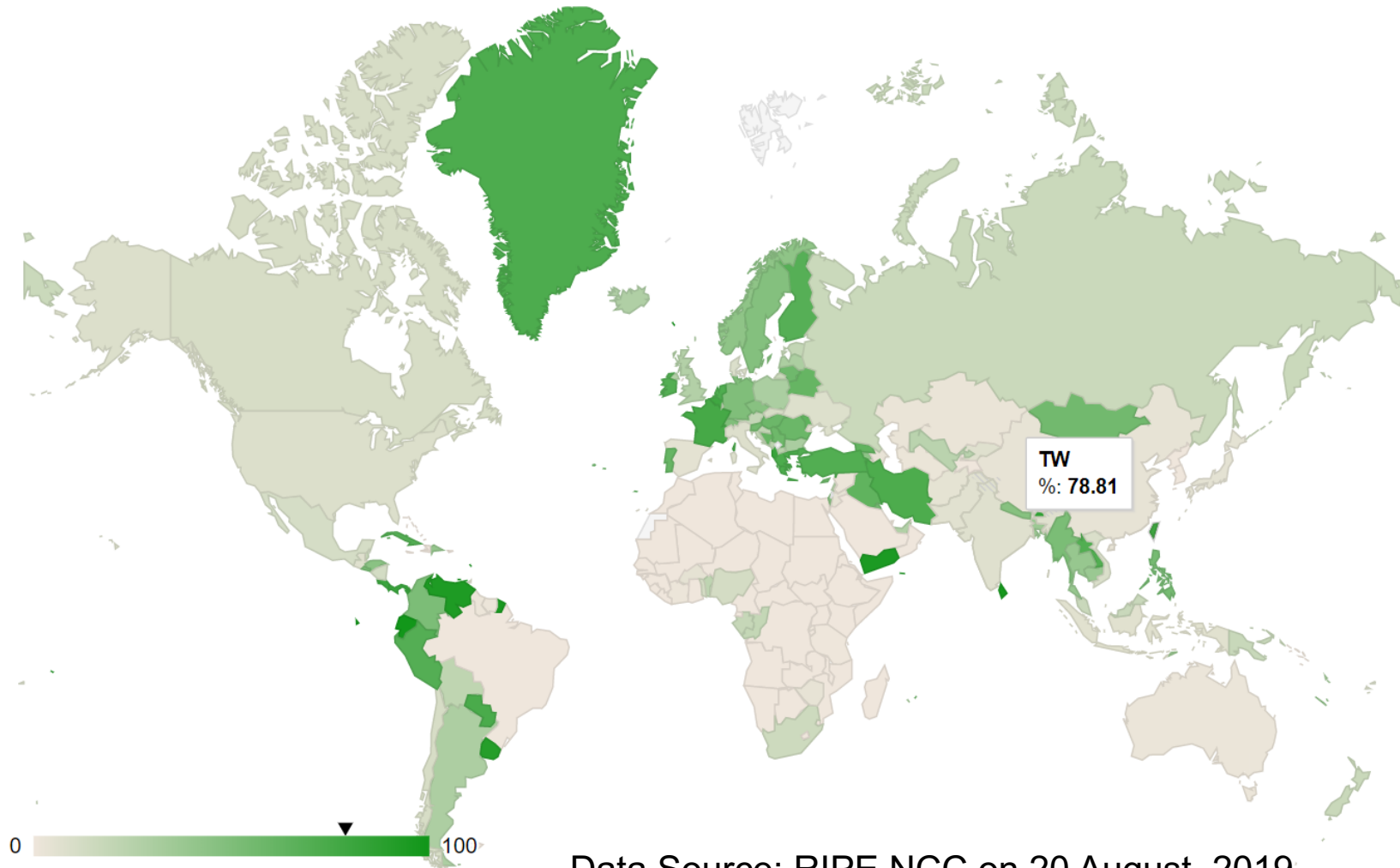
TWNIC RPKI

Tim Wang, TWNIC

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TWNIC RPKI Training

- 4 times TWNIC RPKI training from December 2018 to July 2019.
- The ROA coverage is increased after each training course.
- RPKI Training Outline
  - ❑ RPKI Introduction
  - ❑ RPKI Validator Introduction
  - ❑ RPKI Management System
  - ❑ RPKI Router Configuration
  - ❑ Valid/Invalid Case Study

Taiwan ROA Statistics

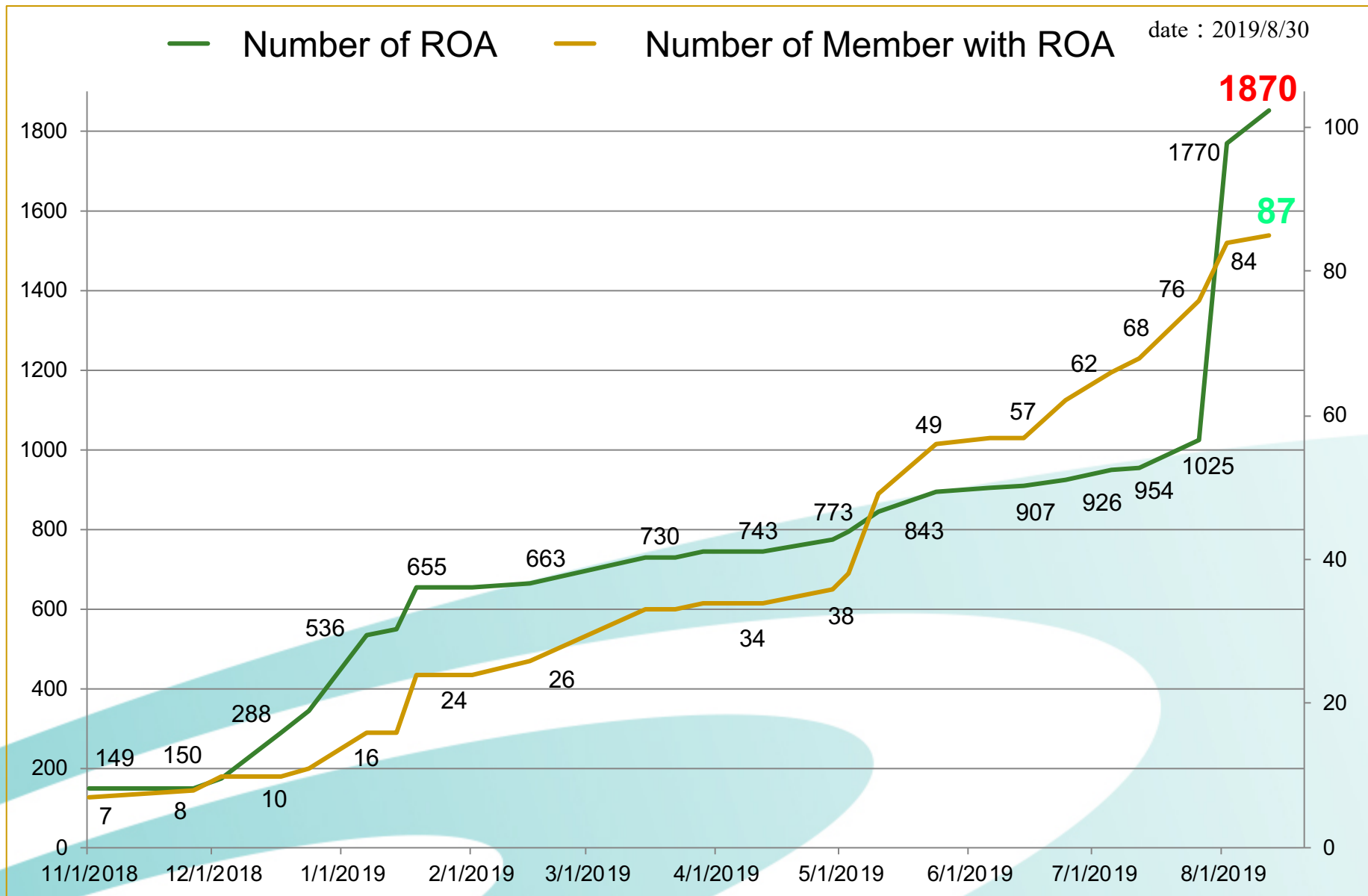Select a graph: [IPv4 space covered ▼]

TW
%: 78.81

0 — 100

Data Source: RIPE NCC on 20 August, 2019

https://lirportal.ripe.net/certification/content/static/statistics/world-roas.html

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TWNIC ROA Trend Chart

TWNIC ROV Ratio Trend Chart

date：2019/8/30

— IPv4 Prefix Valid (%) — IPv6 Prefix Valid (%)

IPv6 values: 70%, 85%, 85%, 85%, 85.80%, 85.80%, 93.30%, 93.80%, **95.2%**

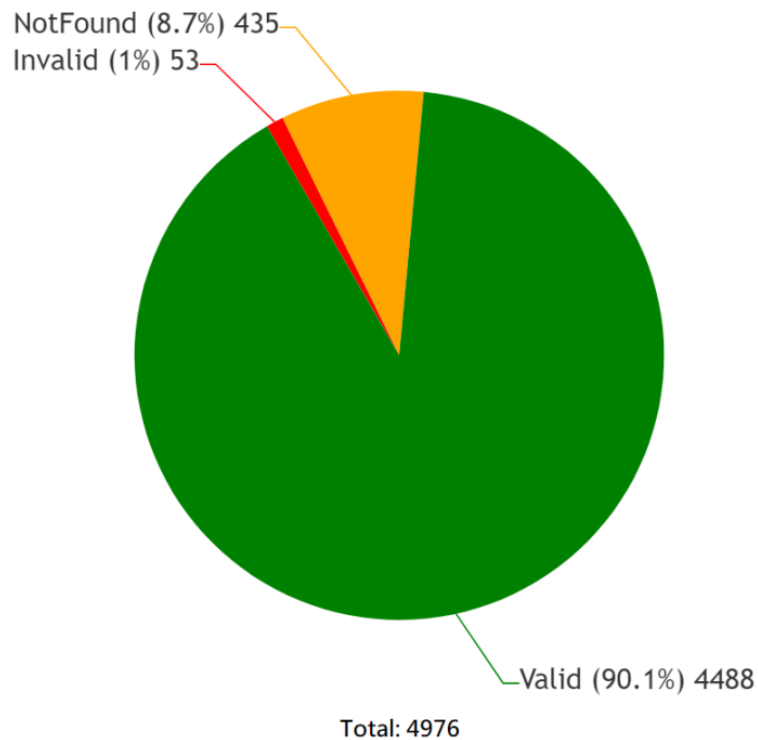IPv4 values: 57.20%, 58.30%, 65.60%, 65.50%, 66.50%, 68.10%, 69.50%, 81.60%, 81.90%, 82%, **90.1%**

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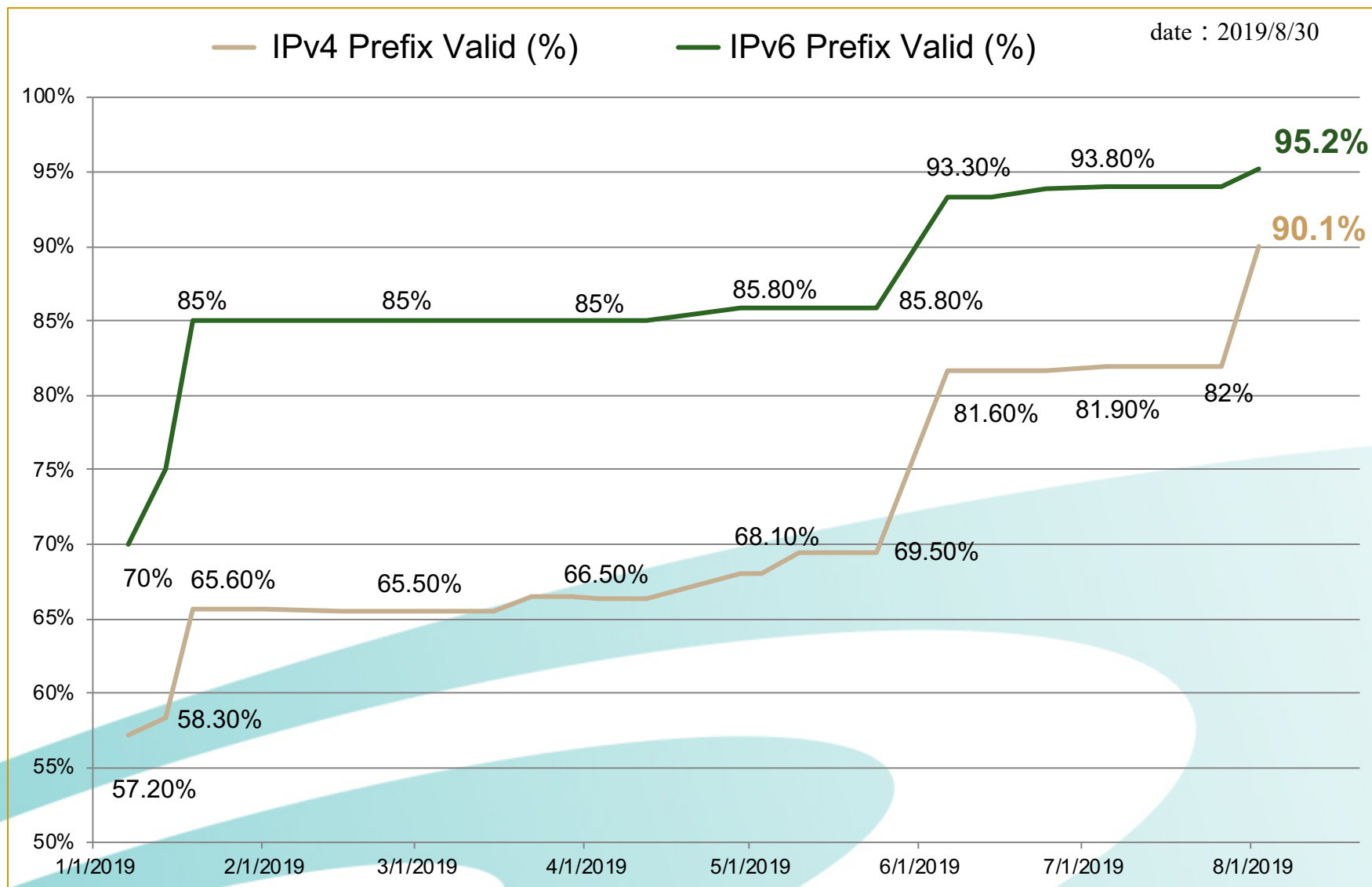
TWNIC RPKI Service

| Number of Routing: IPv4 Valid Prefix 90.1% | Number of Class C: IPv4 Valid Space 83.6% |

NotFound (8.7%) 435
Invalid (1%) 53

Valid (90.1%) 4488

Total: 4976

NotFound (16.2%) 32784
Invalid (0.1%) 234

Valid (83.6%) 169279

Total: 202297

date：2019/8/30

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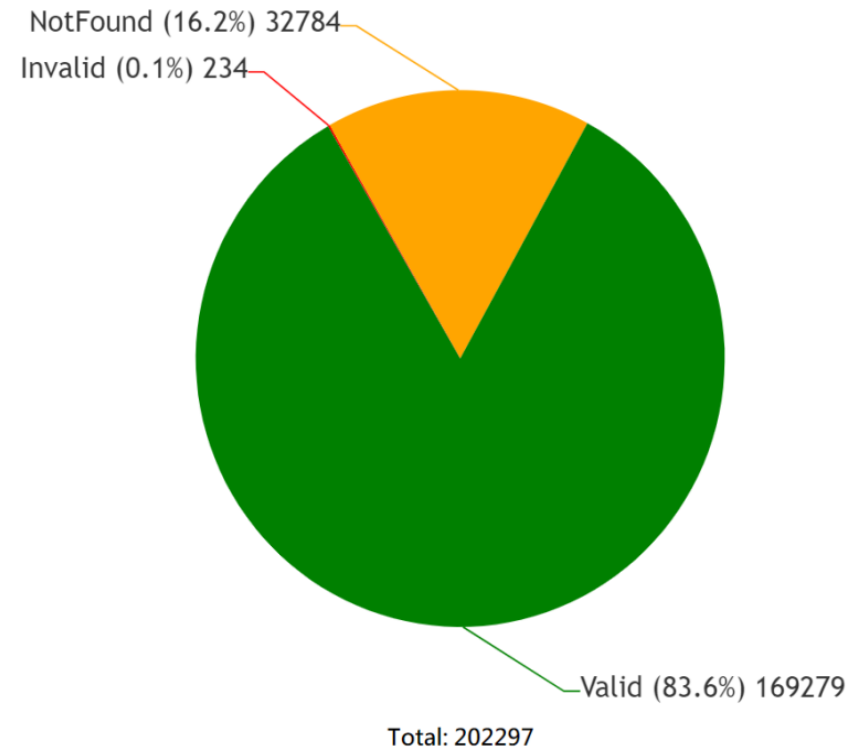
TWNIC RPKI Service

Number of Routing: IPv6 Valid Prefix 95.2%	Number of /64: IPv6 Valid Space 99.2%

NotFound (4.7%) 29

Valid (95.2%) 581

Total: 610

NotFound (0.7%) 90194837504

Valid (99.2%) 12369883037696

Total: 12460077875200

date：2019/8/30

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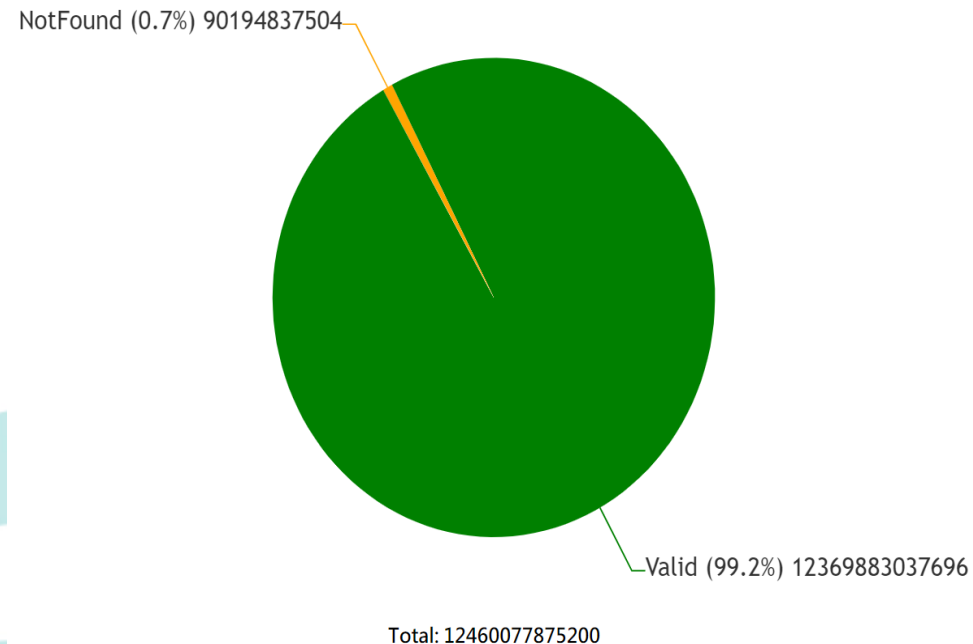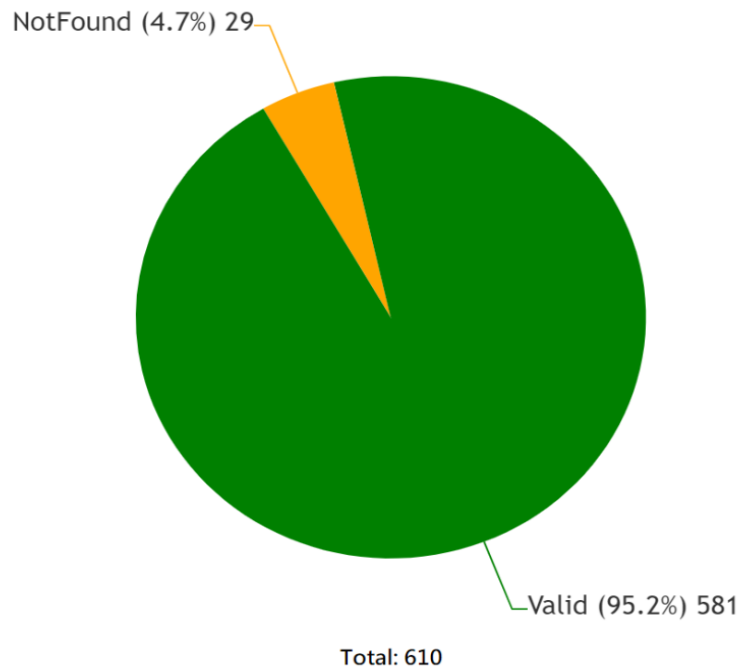
Conclusions & Future Works

- TWNIC have 47 more members this year.
- We encourage and help the Taiwan ISP and service provider to manage the ROA to increase the ROA coverage gradually.
- We will hold the IPv6、RPKI training and activities this year.
- Welcome to attend the APNIC IPv6 Deployment session tomorrow morning.