



addressing the Internet in the Asia Pacific

# 2022

## Annual Report

---



# Contents

Executive Council.....	3	<b>3. DEVELOPMENT .....</b>	<b>44</b>
Welcome from the Director General .....	4	3A. APNIC conferences .....	45
Welcome from the Executive Council Chair .....	6	3B. Foundation support .....	48
Vision and mission.....	8	3C. Community engagement.....	49
Strategic pillars .....	9	3D. Community participation.....	55
APNIC workstreams .....	10	3E. APNIC Academy.....	60
2022 at a glance .....	11	3F. Internet infrastructure support.....	69
Financial performance summary.....	12	<b>4. INFORMATION .....</b>	<b>72</b>
Notes on the activities.....	13	4A. Information products .....	73
<b>1. MEMBERSHIP .....</b>	<b>14</b>	4B. Research and analysis.....	78
1A. Member services .....	15	<b>5. CAPABILITY .....</b>	<b>80</b>
1B. Membership products .....	24	5A. Internal technical infrastructure .....	81
1C. Membership reporting .....	28	5B. Finance and business services .....	87
<b>2. REGISTRY .....</b>	<b>30</b>	5C. Employee experience .....	91
2A. Registration services .....	31	5D. Governance.....	95
2B. Registry products.....	37	<b>FINANCIAL REPORT .....</b>	<b>97</b>
2C. Policy development .....	41	Supporters .....	101
		Appendix: events attended in 2022 .....	102



## EXECUTIVE COUNCIL



**Gaurab Raj Upadhaya, Chair**  
Head of Global Video Delivery, Prime Video  
Amazon



**Yoshinobu Matsuzaki**  
Senior Engineer,  
Internet Initiative Japan Inc



**Vincent "Achie" Atienza, Secretary**  
Peering, Interconnection & Strategy,  
Globe Telecom



**Kam Sze Yeung**  
Principal Network Architect,  
Akamai Technologies



**Kenny Huang, PhD, Treasurer**  
Managing Director and CEO,  
TWNIC



**Feng Leng**  
Director of Operation Management Department,  
China Internet Network Information Center



**Sumon Ahmed Sabir**  
Chief Technology Officer,  
Fibre@Home Limited



**Paul Wilson, Ex-officio**  
Director General,  
APNIC



## WELCOME FROM THE DIRECTOR GENERAL

After two years of COVID, 2022 was a much better year as economies opened up and allowed the return of visitors and face-face events. With resumption of APNIC engagements, it was great to catch up with so many community members, including old friends and quite a few newcomers who had been just a face on Zoom. The ‘buzz’ at APNIC 54 was noticed by everyone who went.

As travel was reopened gradually through the year, 2022 became a very busy year, with greater demand for engagement both online and in-person. What follows are some of the highlights, but as always there’s more detail in this Annual Report which shows what a productive year it was.

### **Nice to see you again!**

APNIC delivered a total of 141 instructor-led training courses to 3,849 participants. These included training at 30 technical events around the region and at APNIC 54 in Singapore, which attracted 563 on-site participants. APNIC engagements increased from 302 in 2021 to 420 in 2022, and that was without a full year of travel activity.

### **Developing an online community.**

Even with return to travel, the demand for online training continued to grow, with the APNIC Academy adding 8,385 new users, and trainees completing 2,010 courses and 11,906 online labs. Twelve new virtual labs were developed and launched in 2022.

The new community platform, Orbit, was also launched at APNIC 54. Orbit is an evolution of mailing lists with added social networking features, and already has more than 8,700 users. If you haven’t tried it yet, I encourage you to do so.

### **Staying secure, inside and out.**

2022 was a big year in Internet security. APNIC supported 45 security-related events, with training, speakers, sponsorship, and/or technical support. The Community Honeynet added five new partners and expanded to 100 sensors, capturing data on security threats around our region. CERTs in Tonga, Korea, Bhutan and New Zealand were also supported by the APNIC team.

Internal security at APNIC was upgraded, with ISO27001 Information Security Management System certification achieved. The vulnerability reporting program was also expanded, along with various internal security improvements.

### **Reaching historical resource holders.**

APNIC worked hard in 2022 to contact historical IPv4 resource holders, and transition them to APNIC membership. It’s a huge challenge to reach these resource holders, with some records nearly 30 years old, and many changes of organizations and contacts.

Through this project, almost 3.4 million of the total 7.3 million IPv4 addresses in question were claimed by holders, and contact with the remaining holders will continue in 2023, before remaining unclaimed space is placed in reserve.

### **Investing in products to help Members.**

The user interface of MyAPNIC was overhauled and a new dashboard developed, along with improvements to election processes for voter eligibility, proxy appointment, and other workflows.



## WELCOME FROM THE DIRECTOR GENERAL - CONTINUED

The handling of ROAs during resource transfers was improved, with development of pre-validation of RPKI changes to avoid costly errors. A prototype registry API was developed for public testing ahead of deployment in 2023. Routing and suspicious traffic alerts were also added to DASH.

There's a great deal more to discover about product and service developments in 2022, in the report that follows.

As 'DG', I want to sincerely thank all APNIC Members, and all members of the APNIC

community, for your continued cooperation in 2022, and also for your strong support in the 2022 APNIC Survey. At the APNIC Secretariat we strive for continuous improvement, and the latest positive results were a proud moment for all of us.

Even while support and satisfaction remain high, we see room and demand for more, and we promise to continue to deliver our very best to you.

Thanks again.

**Paul Wilson**





## WELCOME FROM THE EXECUTIVE COUNCIL CHAIR

On behalf of the APNIC EC, I'm happy to present the 2022 APNIC Annual Report.

2022 was a challenging year as we emerged from the worst of the COVID pandemic but it was also a productive year. Our Director General covered most of the highlights, but I have a few thoughts to share.

### Positive feedback

Feedback from the 2022 Survey was very positive. Member satisfaction was higher than previous surveys, with quality of services at 94%, value of services at 94% and value of membership at 92%. The number of "excellent" ratings increased from the previous survey: from 39% to 54% for service quality, 40% to 54% for service value, and 39% to 51% for membership value.

Member satisfaction with APNIC's transparency remained high at 89%, and 93% of Members agreed that APNIC was respected in the Internet community.

The EC thanks everyone who took time to respond to the survey. There were 1,622 responses, 29% in a non-English language. The results will help APNIC to serve you better: contributing to the 2023 Activity Plan, and also to the 2024-2027 Strategic Plan which will be developed this year.

### Looking back... and forward

2022 was my final full year as the Chair of the APNIC EC, as I will step down from the EC at the end of the APNIC 55 AGM. I'd like to reflect not just on the last 12 months but the past 12 years since I was first elected.

APNIC has developed and matured greatly during that time:

- the number of Members more than tripled, from 2,947 to 9,268, and satisfaction with APNIC's service quality increased, from 81% to 94%.
- Tens of thousands of network operators participated in APNIC training.
- Support for NOGs and Internet infrastructure deployment grew enormously.
- The APNIC Foundation was established and helped to raise funding for development work.
- The new security team brought knowledge to the community and supported the birth of new CERTs in the region.
- New services were launched including the APNIC Academy, online technical assistance, and information products such as the APNIC Blog, DASH, REx and NetOX.
- APNIC executed its core role as an RIR. Number resources were managed efficiently, within policy and SLAs, with low levels of fraud.
- IPv6 adoption in the region grew from less than 1% to nearly 40%.
- RPKI launched in 2012 and adoption has grown quickly – 35% of Asia and 65% of Oceania are publishing ROAs.
- As you may have noticed, the level of detail on APNIC activity planning and execution have changed, bringing more transparency and accountability. This annual report is testament to that.



## WELCOME FROM THE EXECUTIVE COUNCIL CHAIR - CONTINUED

This is just a snapshot of the past 12 years, but it illustrates a very important point: APNIC has been a well-run, financially stable, transparent organization providing critical services to Members and the community for a long time. And judging by the Survey results over the past decade, this is something that Members agree with.

As we enter APNIC's 30th year, we must be careful not to lose what we, the Members of APNIC, have helped guide and build. Your choices of EC leadership, and your input into the future direction of APNIC, are very important.

As the new Strategic Plan is developed this year, for 2024 and beyond, and as APNIC enters its next decade, I will be watching and participating where I can.

Thank you to all Members, EC members, the APNIC Secretariat, and the wider Internet community for your support over the past 12 years and in particular, my last seven years as Chair. It has been a rewarding and fun ride.

I wish you all the best and encourage you to help develop the successful path that we have all forged together.

**Gaurab Raj Upadhaya**





# Vision and Mission

APNIC's Four Year Strategic Plan (2020-2023) introduced an updated Vision and Mission, and a new structure for activities under five strategic pillars (detailed on the following page).

## VISION

A global, open, stable, and secure Internet.

## MISSION

To provide essential services as a Regional Internet Registry, and to support Internet development in the Asia Pacific region.

### PURPOSE

To serve our community.

### IDENTITY

A not-for-profit trusted authority on Internet infrastructure.

### VALUES

Passion  
Trust  
Curiosity  
Accountability  
Inclusion

### CREDO

We are APNIC.  
One team dedicated to making a positive impact.  
Our ambition will be achieved by working together.  
Trust and respect for each other are not negotiable.  
Inclusion and diversity really matter to us.  
We take pride and excel in everything we do.  
We are curious. We are accountable.  
We are APNIC.





# Strategic Pillars



## 1. MEMBERSHIP

Develop and deliver world-class products and services required by APNIC Members.

Engage with Members in building a global, open, stable and secure Internet.

Ensure accountable governance of APNIC as a membership organization.



## 2. REGISTRY

Develop and deliver world class registry products and services required by the community.

Ensure responsible stewardship of Internet number resources and deliver accurate registry services.



## 3. DEVELOPMENT

Invest in sustainable development of the regional Internet community, industry and infrastructure.

Build capacity for best-practice Internet operations across the Internet technical community.



## 4. INFORMATION

Support Internet development with needed network information services, and research outcomes which are of demonstrated value to the community.



## 5. CAPABILITY

Provide stable and secure technical infrastructure to support APNIC operations and services.

Develop a strong service culture driven by people committed to APNIC's vision and values.

Sustain a healthy and resilient organization.



# APNIC Workstreams

The Four Year Strategic Direction (2020-2023) defines 18 workstreams, across the five pillars, as follows. Each workstream includes a number of activities that are described in this plan.



## 1. MEMBERSHIP

- 1A. MEMBER SERVICES**  
*Deliver excellence in service and value to Members through active and quality engagement.*
- 1B. MEMBERSHIP PRODUCTS**  
*Apply best practice in development of membership products that meet Members' needs and exceed their expectations.*
- 1C. MEMBERSHIP REPORTING**  
*Ensure that APNIC remains fully accountable to its Members, by providing timely and accurate information about APNIC operations.*



## 2. REGISTRY

- 2A. REGISTRATION SERVICES**  
*Provide delegation and registration services for Internet numbers (ASNs, IPv4, IPv6) according to community developed policies.*
- 2B. REGISTRY PRODUCTS**  
*Maintain an accurate number registry and reliable registry services.*
- 2C. POLICY DEVELOPMENT**  
*Facilitate the open Policy Development Process to ensure resource policies in the APNIC region are developed and implemented in a neutral manner consistent with agreed rules and community expectations.*



## 3. DEVELOPMENT

- 3A. APNIC CONFERENCES**  
*Deliver engaging and relevant APNIC conferences for learning, sharing ideas and experience, professional networking, and Internet policy development.*
- 3B. FOUNDATION SUPPORT**  
*Provide financial and operational support to ensure the success of the APNIC Foundation.*
- 3C. COMMUNITY ENGAGEMENT**  
*Build and maintain close and meaningful relationships between APNIC and its various communities.*
- 3D. COMMUNITY PARTICIPATION**  
*Encourage awareness, diversity, participation, and leadership in APNIC processes, events, and activities.*
- 3E. APNIC ACADEMY**  
*Scale up training and technical assistance infrastructure with high-quality training content and curriculum.*
- 3F. INTERNET INFRASTRUCTURE SUPPORT**  
*Promote and support the deployment of critical Internet infrastructure and deploy tools for operational infrastructure monitoring.*



## 4. INFORMATION

- 4A. INFORMATION PRODUCTS**  
*Provide meaningful information services to the communities APNIC serves.*
- 4B. RESEARCH AND ANALYSIS**  
*Analyse the pressures shaping the evolution and future demands of Internet names and numbers infrastructure, and their impacts.*



## 5. CAPABILITY


- 5A. INTERNAL TECHNICAL INFRASTRUCTURE**  
*Provide stable and secure technical infrastructure to support APNIC operations and services.*
- 5B. FINANCE AND BUSINESS SERVICES**  
*Provide efficient and robust finance and business services and facilities to effectively support APNIC's operations.*
- 5C. EMPLOYEE EXPERIENCE**  
*Attract, develop and retain talented, service-oriented people to deliver APNIC's mission and exceed organization and community expectations.*
- 5D. GOVERNANCE**  
*Provide the legal, economic and governance framework and professional services to support APNIC's operations to minimize risk and ensure compliance and continuity.*



# 2022 at a Glance

# 2022

2A.1




**IPv6 growth**

Members with IPv6 addresses  
**69.47%**

Asia Pacific IPv6 capability  
**39.74%**

4A.1



**Blog**

**79,707**  
Views per month

4A.2



**Information tools monthly users:**

**394** | **2,210** | **3,559**

DASH | REx | NetOX

3E.2



**Training**

**Instructor-led training**

**141** courses

---

**3,849** participants

**18** live webinars  
**1,048** attendees

**Self-paced training**

**2,010** course completions

---

**11,906** labs launched

---

**8,385** new accounts

2A.1




**Available resources**

**0.5%** IPv4 | **90.3%** IPv6 | **0.7%** ASNs

3A.1

**Conferences**



**886** remote participants

**3,854** YouTube views  
**870.49** YouTube hours viewed

---

**54** APNIC 54 remote participants and **563** in-person participants

---

**2,565** YouTube views  
**537.34** YouTube hours viewed

3F.2

**Security**



**20** Community Honeynet partners

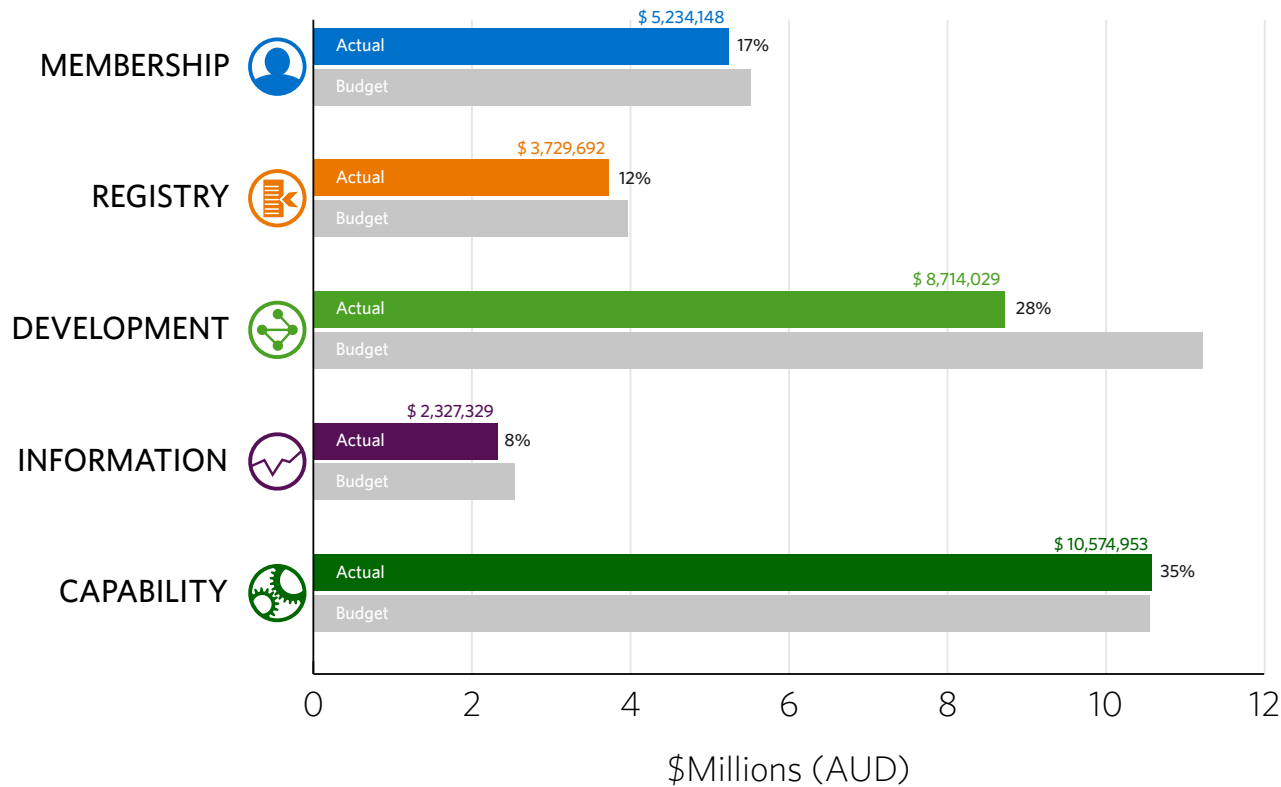
**45** Security-related events

**ISO27001** certification achieved



# Financial Performance Summary

## OPERATING EXPENSES BY OUTCOME AREA



Note: Some numbers presented in this chart may not add up precisely due to rounding.

In addition to standard financial reporting, APNIC also reports activities and expenses under the five pillars and 18 workstreams detailed on page 10.

The chart on this page illustrates 2022's actual operating expenses compared to the budget in the 2022 Activity Plan. The percentage for each area indicates the proportion of the total budget it represents.

For more details on APNIC's 2022 finances, please refer to pages 97-100 to view:

- Financial Report by Activity
- Statement of Financial Position
- Statement of Income
- Cash Flow Statement



# Notes on the Activities

APNIC's activities are reported in this document under the 18 workstreams and five pillars described in the previous section:



Membership



Registry



Development



Information



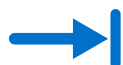
Capability

## THE ACTIVITIES

The Activities are described as either 'Operations' or 'Investments'.



'Operations' includes all ongoing activities required for continued provision of APNIC services.



'Investments' are discrete project activities that result in new products, services, or improvements to APNIC services. Where these investments are funded by the APNIC Foundation (not Member funds), it is clearly noted.

## SUCCESS INDICATORS

The status of Success indicators in the document's following pages is denoted by a coloured circle for at-a-glance reference on progress.



Completed



At least 90% complete



Less than 90% complete

A table summarizes the resources (financial and human) needed to successfully complete the operations and investments in each workstream.

**All monetary figures quoted are in Australian Dollars (AUD).**

	Budget	Actual
① PY	22.42	19.88
② Expenses	5,441,868	4,685,680
③ CAPEX	-	7,935

① **PY:** A 'person year', representing the amount of work done by one-full-time staff member in one year. Most activities incur a staffing cost, expressed in PY, and in most cases, this comprises contributions from multiple employees. For example: a PY of 1.6 may be made up of four employees who each contribute 40% of their time for a period of one year (0.4 PY).

② **Expenses:** Refers to all operational costs directly incurred by the activity.

③ **CAPEX:** Provides the provision for capital expenditure required by the activity.



# 1. MEMBERSHIP



## OBJECTIVES

Deliver world-class products and services required by APNIC Members.  
 Engage with Members in building a global, open, stable and secure Internet.  
 Ensure accountable governance of APNIC as a membership organization.

## WORKSTREAMS

- 1A. Member Services
- 1B. Membership Products
- 1C. Membership Reporting

## MEMBERSHIP - SUMMARY

	Budget	Actual
PY	24.93	24.28
Expenses	5,509,241	5,234,148
CAPEX	-	-



# 1A. Member Services

## OPERATIONS

### 1A.1. Member service delivery

The Member Services team handled 15,313 tickets created by Member and community enquiries, 1,337 voice calls and 3,552 online chat sessions. In addition, more than 10,655 Member invoices and receipts were processed. The APNIC Helpdesk maintained its standing commitment to respond to Member queries within two business days.

Helpdesk service satisfaction remained high with 95% of respondents providing ‘excellent’ and ‘above average’ scores (749/792 responses). All negative feedback was actively resolved by Member Services staff.

There were 268 Member Services engagements across 32 economies, covering RPKI, resource transfers, technical assistance, awareness of upcoming events, and the historical resources transition project.

Quarterly meetings were held with all National Internet Registries (NIRs), including a workshop at IRINN’s New Delhi office in November and a three-day hosted visit of 19 delegates from IDNIC in Brisbane in June.

Thirty-five cases of attempted fraud in new Member applications were detected and prevented.

## RESOURCING

	Budget	Actual
PY	14.67	14.13
Expenses	2,989,124	2,799,996
CAPEX	-	-

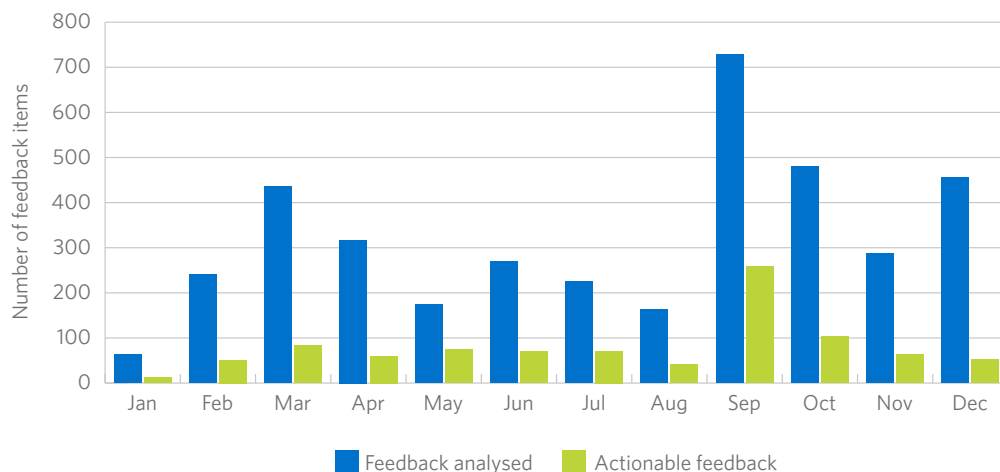


# 1A. Member Services - continued

## 1A.2. Member experience

Members and the community provided 3,842 feedback items on topics including payments and billing, conferences, website user experience and training. 940 items required action and were resolved.

### COMMUNITY FEEDBACK ANALYSIS



There were 421 feedback engagements (user experience tests, surveys, and one-on-one interviews) held with Members during the year to help improve website usability, payment and billing processes, and design improvements to MyAPNIC and APNIC Academy.

The APNIC website achieved an online System Usability Scale score of 68/100 after improvements to page design, content, and navigation (including mobile).





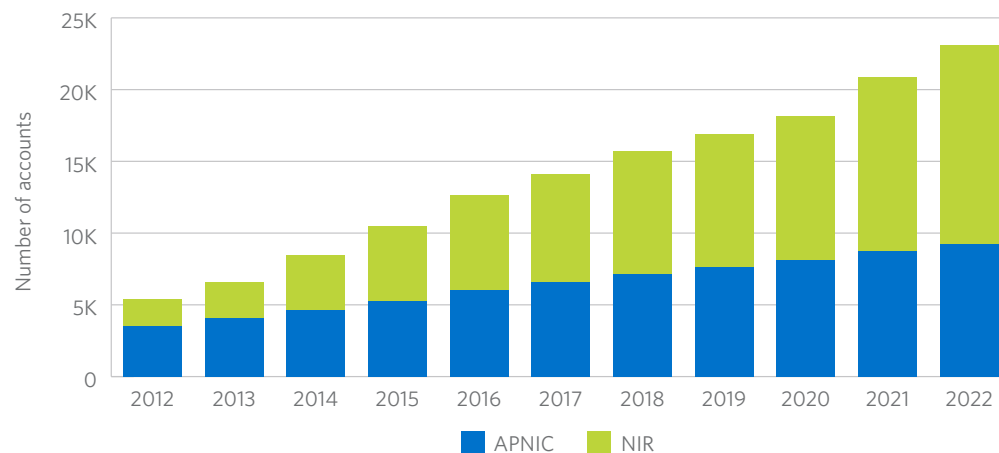
# 1A. Member Services - continued

## 1A.3. Membership development

New Member outreach was conducted at the ITCN Expo in Pakistan, PCTA in the Philippines, CommunicAsia in Singapore, bdNOG 14 in Bangladesh, SANOG 38 in Nepal, LKNOG in Sri Lanka and the APNIC conferences.

A total of 824 new Members joined APNIC, including six from Service Partners and 15 from Member referrals. The net new Members added (including closures and reactivations) was 500, including 150 Associate Members joining APNIC as a result of the historical resources transition project.

### MEMBERSHIP GROWTH



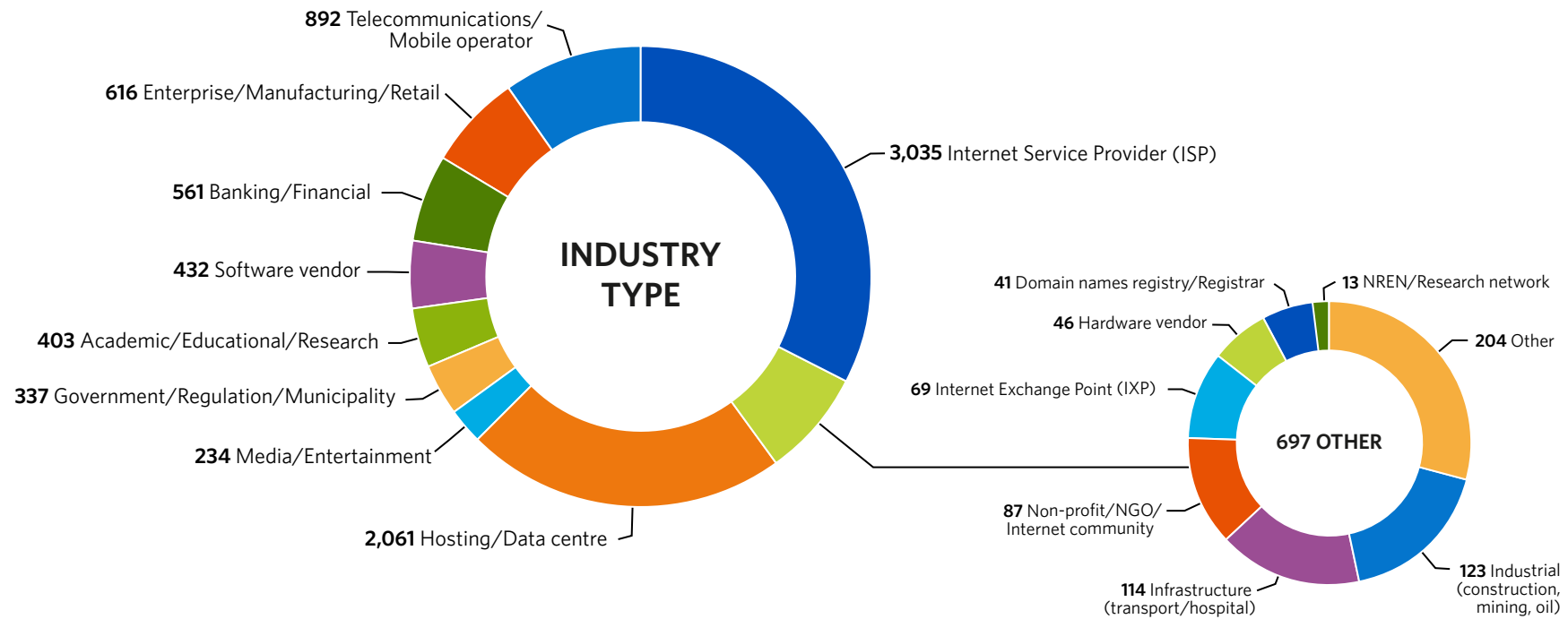
At the end of 2022, APNIC direct membership stood at 9,268, an increase of 5.7% on 2021. In addition, there were 13,807 NIR sub accounts, after growth of 14.2% in 2022.

Total combined membership was 23,075.



# 1A. Member Services - continued

MEMBERSHIP INDUSTRY TYPE





## 1A. Member Services - continued

### 1A.4. APNIC Survey

The 12th APNIC Survey was conducted from 13 June to 7 July 2022. The survey questionnaire was developed following remote interviews with 37 Members and stakeholders across 25 economies (including all seven National Internet Registries (NIRs)). Both the survey and remote interviews were conducted by independent researcher, Survey Matters.

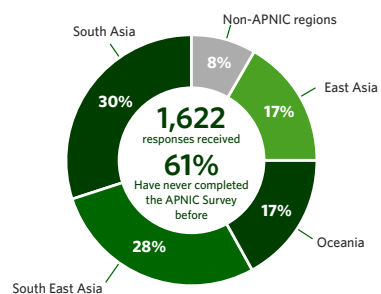
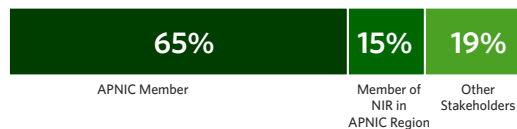
A total of 1,622 responses were received, with 61% participating in the APNIC Survey for the first time, and 29% of respondents used the translated versions (available in 10 languages). The final results were reported at APNIC 54.

A snapshot of the survey results is included on the following page.

# 1A. Member Services - continued

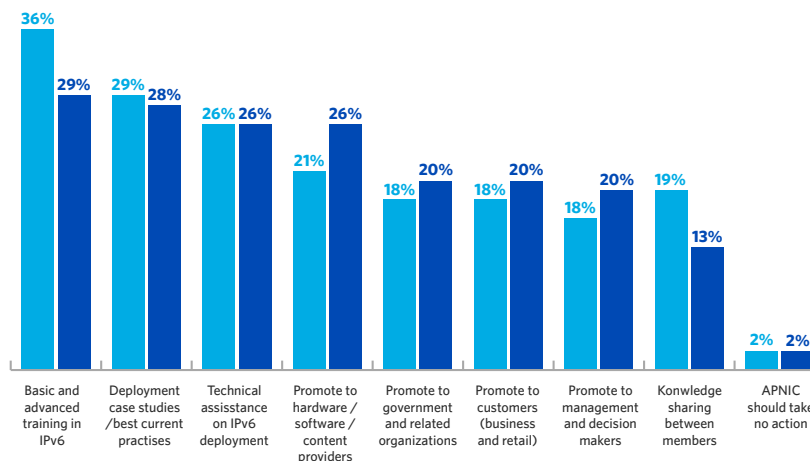
## RESPONSE FIGURES

### MEMBERSHIP STATUS



## IPv6

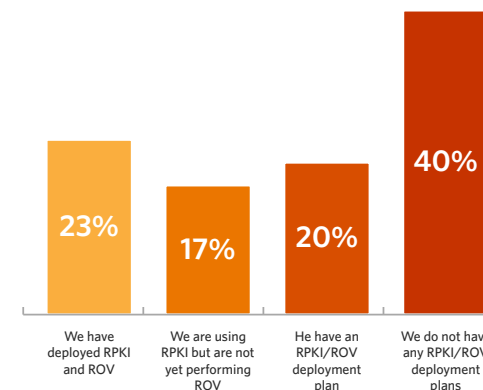
### ACTIVITIES TO ENCOURAGE IPv6 ADOPTION



■ 2022 ■ 2020

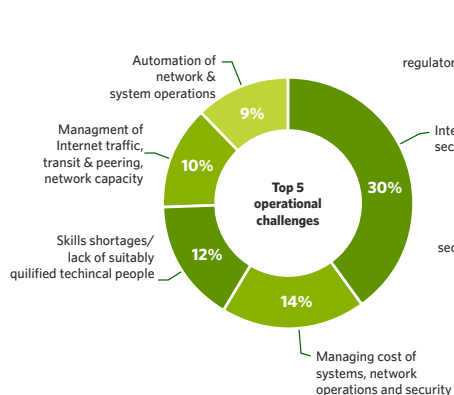
## RPKI/ROV

### DEPLOYMENT STATUS



## MEMBER CHALLENGES

### OPERATIONAL CHALLENGES

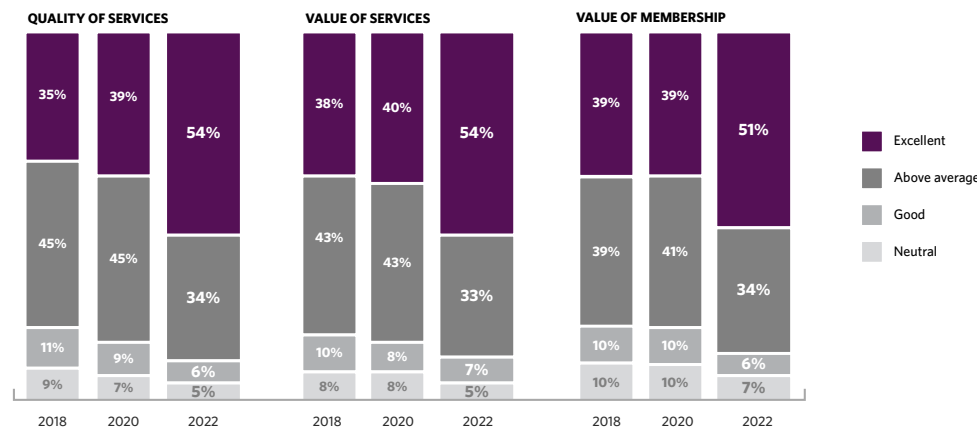


### STRATEGIC CHALLENGES



## MEMBERSHIP SATISFACTION

### HOW WOULD YOU RATE APNIC'S:



■ Excellent  
■ Above average  
■ Good  
■ Neutral



# 1A. Member Services - continued

## INVESTMENTS

### 1A.5. Historical resources transition →

APNIC reviewed and classified 7,341,824 historical IPv4 addresses, registered to 3,377 different holders, not managed under an APNIC account.

Attempts were made to contact the address holders to advise them of the need to open an APNIC account to continue to receive registration services, with 988 reached. Contact attempts with an unresponsive 1,587 holders will continue in 2023, while an additional 802 address holders have been deemed uncontactable.

The project is expected to be completed in early 2023 and all unclaimed address space will be placed into 'reserved' status.

	Holders	Percentage	Addresses
Attempting to contact holders (no response)	1,587	46.99%	2,676,480
Uncontactable holders	802	23.74%	1,062,144
Addresses retained / being claimed by holders	822	24.37%	3,389,184
Addresses voluntarily returned to APNIC	160	4.73%	188,416
Routed without authority (reclaimed by APNIC)	6	0.17%	25,600
<b>Total number of holders</b>	<b>3,377</b>	<b>100%</b>	<b>7,341,824</b>



# 1A. Member Services - continued

## SUCCESS INDICATORS - 1A

Targets	Results	Status
Increase Member outreach touchpoints by at least 20% from 148 in 2021	268 touchpoints	●
Maintain helpdesk SLA of two business day response to enquiries	99.99% SLA	●
Maintain service satisfaction ratings of at least 93% "excellent and above average" feedback	95%	●
Proactive Member service engagement in at least 47 economies	32 economies	●
Conduct quarterly meetings with all NIRs	4 out of 4	●
100% of improvement suggestions are assessed and followed up	100% resolved	●
Increase engagement with User Feedback Group at least 20% from 298 in 2021	421 engagements	●
Achieve online System Usability Scale (SUS) score of 68/100	68/100	●



## 1A. Member Services - continued

### SUCCESS INDICATORS - 1A - CONTINUED

Targets	Results	Status
At least eight membership development activities in target economies	8 out of 8	●
Achieve at least 492 new Members (net) in 2022	500	●
Increase total survey response by at least 10% from 1,624 in 2020	1,622	●
Achieve at least 10% of responses by new survey participants	61%	●
Attempt contact with all historical resource holders	Contact attempted with 3,377	●
All 7,341,824 historical IPs are either registered to a current APNIC account or deregistered	2,676,480 remain	●
All remaining unused resources are claimed, transferred, or returned to APNIC	2023 completion	●



# 1B. Membership Products

## OPERATIONS

### 1B.1. Membership product management

MyAPNIC achieved a user satisfaction rating of 81% and maintained availability of 99.99%.

The election platform (BigPulse) supported a record 1,270 Members voting in the 2022 EC election at APNIC 53, with 460 users supported at the NRO NC and SIG elections at APNIC 54.

## RESOURCING

	Budget	Actual
PY	9.40	8.82
Expenses	1,844,666	1,665,309
CAPEX	-	-





# 1B. Membership Products – continued

## INVESTMENTS

### 1B.2. Membership product development →

#### Planned goals completed:

- Implement a new eduroam API
  - An eduroam API using the Okta SSO was deployed.
- Develop an internal LDC graduation process
  - Aspects of the Least Developed Country (LDC) graduation process were automated to eliminate human error.
- Add automated workflow to support the historical resources transition project
  - Updated ARMS and billing processes to allow historical resource holders to convert to Associate Members. Added functionality to allow Helpdesk staff to easily distinguish historical resource holding accounts.
- Improve the quality and workflow of 'Invalid Contact' reports
  - Streamlined the 'Invalid Whois Contact' reporting process by providing an instant feedback mechanism for information validated on the form.
- Overhaul MyAPNIC information architecture
  - Deployed information architecture changes to allow Members to easily locate and complete tasks.
  - New profile page allows users to manage additional profile data and control where the data is displayed.
- Improve voting eligibility checks
  - Created past event visibility for APNIC Login users to check SIG voting eligibility and improved profile management functionality.
- Implement a new MyAPNIC dashboard
  - New interface developed with additional widgets and tools.
- Improve MyAPNIC audit and activity logs for corporate contacts
  - Improvements complete.

[roadmap.apnic.net](https://roadmap.apnic.net)



## 1B. Membership Products – continued

- Automatically link eligible contacts to MyAPNIC
  - Updates completed.

### Additional goals completed

- Upgrade APNIC Login
  - The migration of more than 60,000 APNIC Login SSO users from Keycloak to Okta was completed. Updated the Okta configuration to improve security workflows and reporting.
- Improve Help Centre articles
  - Usability of Help Centre articles was improved by adding visual indicators to distinguish between article types.
- Improve EC election proxy appointment feature
  - Reduced EC election proxy voting time from 90 seconds to 20 seconds (78% improvement).
- Improve MyAPNIC process to change an organization's name
  - Streamlined the Member organization name change process name by automating several steps.

### Goals in progress

- Improve MyAPNIC contact management
  - Improving the way Members manage account contacts and updating data model for authenticating users. Deploying mandatory 2FA.

### Goals deferred

- None.



## 1B. Membership Products – continued

### SUCCESS INDICATORS – 1B

Targets	Results	Status
Maintain MyAPNIC availability of at least 99.99%	99.99%	●
Achieve Membership Products satisfaction of at least 80%	81%	●
Achieve all 2022 goals, according to the <a href="#">Membership Products Roadmap</a>	13 completed 1 in progress 0 deferred	●



# 1C. Membership Reporting

## OPERATIONS

### 1C.1. Planning and reporting

The 2022 Activity Plan and Budget and 2021 Annual Report were presented at the 2022 Annual General Meeting in March. The 2023 Activity Plan and Budget was approved by the EC in December.

All EC minutes were published in line with agreed deadlines.

A public webpage tracking progress against 2022 activities was published and updated throughout the year.

## RESOURCING

	Budget	Actual
PY	0.87	1.34
Expenses	675,451	768,843
CAPEX	-	-



## 1C. Membership Reporting – continued

### SUCCESS INDICATORS - 1C

Targets	Results	Status
<b>Publish required reports on the day of the APNIC Member Meetings</b>	Achieved	●
<b>Publish EC Minutes within two months of each EC meeting</b>	Achieved	●



## 2. REGISTRY



### OBJECTIVES

Develop and deliver world class registry products and services required by the community.

Ensure responsible stewardship of Internet number resources and deliver accurate registry services.

### WORKSTREAMS

- 2A. Registration Services
- 2B. Registry Products
- 2C. Policy Development

### REGISTRY - SUMMARY

	Budget	Actual
PY	15.16	13.45
Expenses	3,965,675	3,729,692
CAPEX	230,000	34,590



## 2A. Registration Services

### OPERATIONS

#### 2A.1. IPv4, IPv6 and ASN delegation and registration services

APNIC processed 1,323 IPv6 delegations, 2,618 IPv4 delegations, 787 ASN assignments, 619 IPv4 market transfers (475 within the Asia Pacific region and 144 between APNIC and other RIR regions), and 218 Merger and Acquisition IPv4 transfers. These are illustrated on the following pages.

The proportion of APNIC Members that hold IPv6 resources is 69.47%.

At the end of 2022, APNIC had allocated 99.5% of its total IPv4 number resource pool, 9.7% of its IPv6 pool and 99.3% of its ASN pool. No allocations were received from IANA.

The status of APNIC’s Internet number resource pools at the end of 2022 is below.

	Total at 1 Jan 2022	From IANA	Transfers in	Transfers out	Total at 31 Dec 2022	Total delegated	Total reserved	Total available
<b>IPv4 (/24s)</b>	3,483,932	0	2,211	3,911	3,482,232	3,465,983	5,911	10,338
<b>IPv6 (/32s)</b>	1,067,008	0	0	0	1,067,008	103,088	109,815	854,105
<b>ASNs</b>	29,336	0	3	2	29,337	27,391	0	1,946

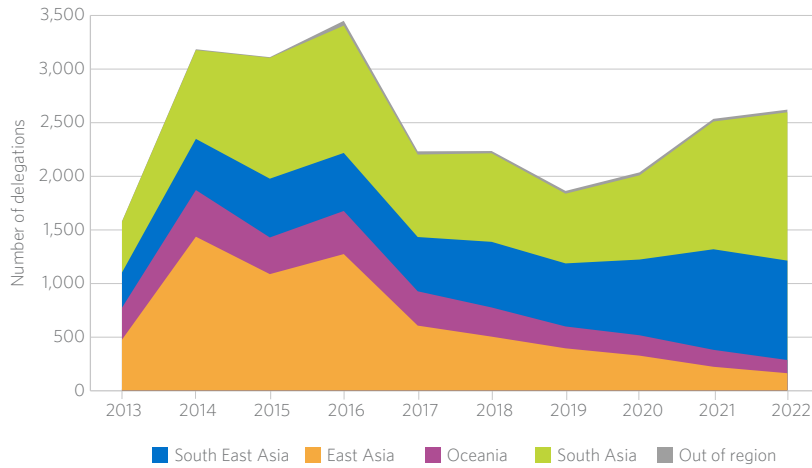
### RESOURCING

	Budget	Actual
PY	5.11	5.38
Expenses	772,183	794,949
CAPEX	-	-

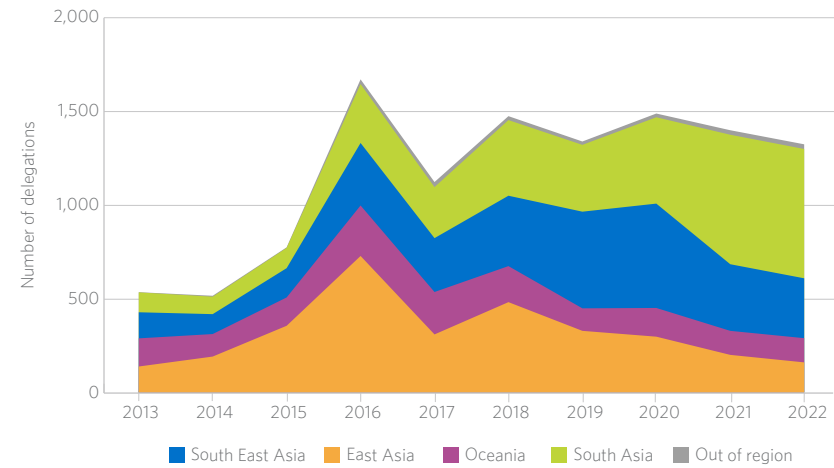


## 2A. Registration Services – continued

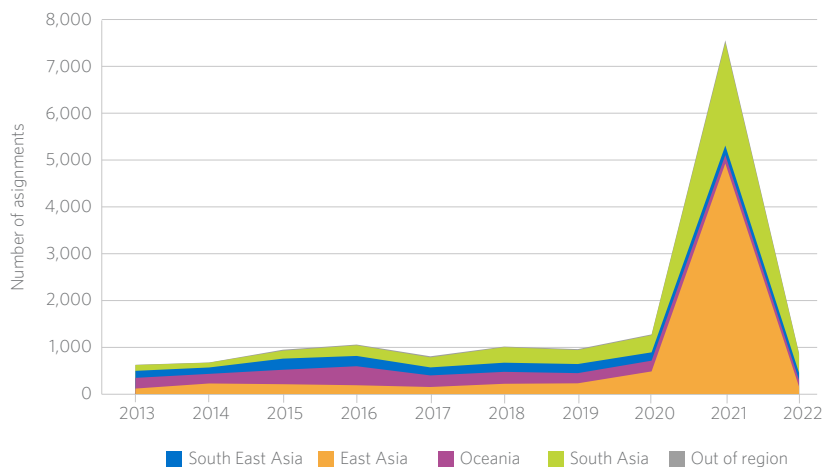
IPv4 DELEGATIONS



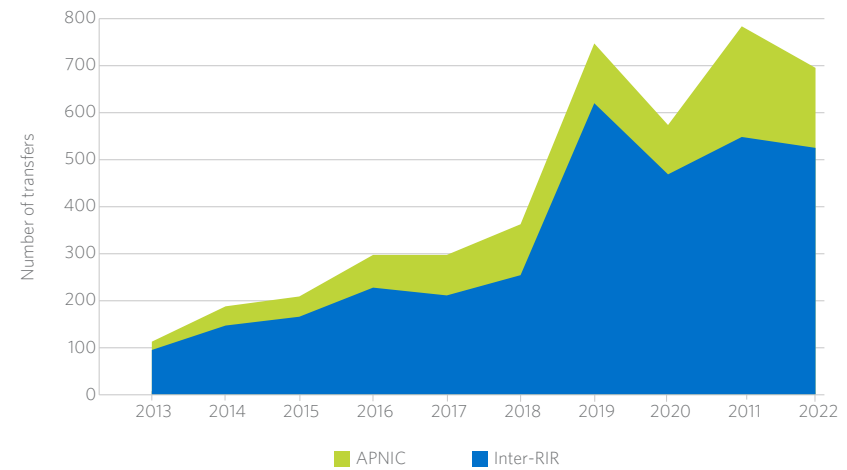
IPv6 DELEGATIONS



ASN ASSIGNMENTS



IPv4 MARKET TRANSFERS



Note: Large requests from networks in China and India account for the significant rise in ASN assignments in 2021.

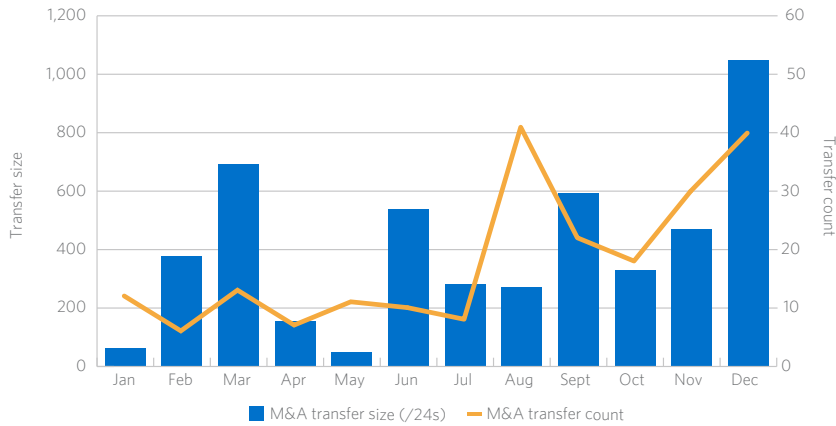




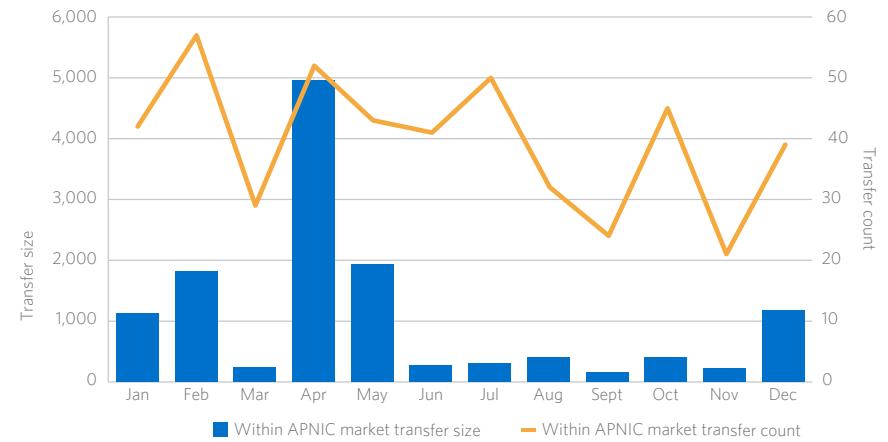


## 2A. Registration Services – continued

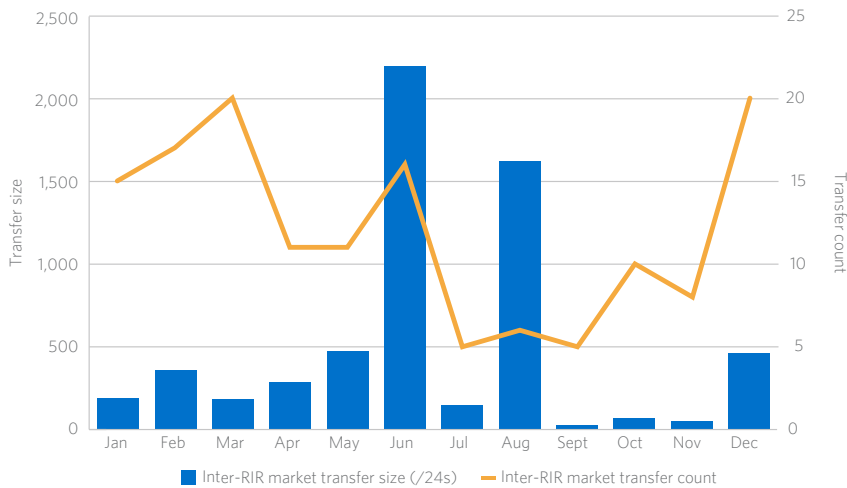
M&A AND HISTORICAL TRANSFERS



MARKET TRANSFERS WITHIN APNIC



INTER-RIR IPv4 TRANSFERS

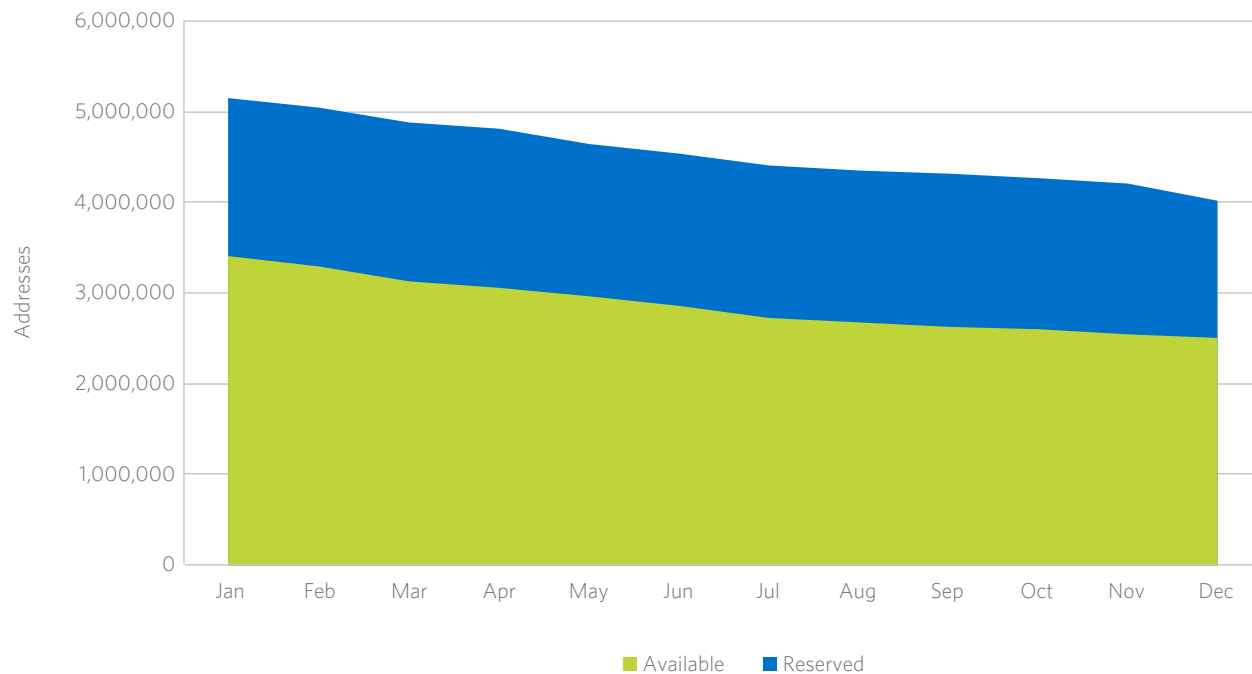


- The number of M&A and historical transfers increased in December due to the historical resources transition project and a large Member merging its accounts.
- There was a large transfer made in April in China.
- There were two large inter-RIR transfers from the RIPE NCC and to ARIN.



## 2A. Registration Services – continued

AVAILABLE IPv4 ADDRESS SPACE



There were 2,646,528 IPv4 addresses remaining in APNIC's available pool for distribution at the end of 2022.





## 2A. Registration Services – continued

### 2A.2. Maintain correct and current registry data

Members with invalid Incident Response Team (IRT) objects were identified and assisted with completing their validation. 80% of Members validated their IRT object (7,946 of 9,939 accounts).

APNIC has used two of the three dimensions of ‘accuracy’ defined by the NRO (and based on ICANN’s ITHI initiative) for Internet number resources data: ‘Comprehensive’ and ‘Correct’. The following are the measurements for resources managed by APNIC (excluding NIRs).

Type of Record	Number of records	Score	% of total records
<b>Comprehensive</b>			
Have a parent block with org object and IRT	39,227	100	89.8%
Have no org object and no IRT	3,575	0	8.1%
Have IRT but no org object	859	50	1.9%
Have org object but no IRT	2	50	0.0004%
<b>Correct</b>			
Have a parent block with org object and validated IRT	31,823	100	73.5%
Have org object but no validated IRT	7,406	50	16%
Have no org object and no validated IRT	4,039	0	9.5 %
Have validated IRT but no org object	395	50	1%

A review of the current measurement methodology began at the end of 2022 to consider future improvements.



## 2A. Registration Services – continued

### SUCCESS INDICATORS – 2A

Targets	Results	Status
Maintain Registration Services SLA of two business day response to enquiries	99.99%	●
Increase percentage of Members holding IPv6 address space to at least 70% from 68%	69.47%	●
Comply with ITHI reporting requirements	2 out of 3 implemented	●
Increase validation of registration records to at least 85% from 76%	80%	●



## 2B. Registry Products

### OPERATIONS

#### 2B.1. Internet number registry management

An API to assist NIR resource administration and registry accuracy was developed and deployed to production in June.

The APNIC Registry Management System (ARMS) maintained availability of 99.99%.

#### 2B.2. Registry product management

The Registration Data Access Protocol (RDAP) service was updated to comply with the RIR RDAP profile to improve consistency.

Improvements were also made in the RPKI production system, with the validity period for manifests and CRLs (Certificate Revocation Lists) in the APNIC repository increased from two to seven days to provide more time for rectification in case of an error.

### RESOURCING

	Budget	Actual
PY	9.30	7.35
Expenses	2,612,611	2,344,852
CAPEX	230,000	34,590



## 2B. Registry Products – continued

### INVESTMENTS

#### 2B.3. Registry product development →

##### Planned goals completed

- Improve ROA deletion and recreation process for transfers
  - ROA transition during transfer is now supported.

##### Additional goals completed

- New transfer log for prop-142 implementation
  - Published a new transfer log, including data about transfer types that was not available in existing reports.
- MyAPNIC Resource Manager Restyling
  - Resource management components were fully integrated into the new MyAPNIC portal.

##### Goals in progress

- Update authorization mechanisms for whois
  - Final testing of whois and MyAPNIC work nearing conclusion. Expected completion Q1 2023.
- Improve ASN delegation identity in whois and MyAPNIC
  - Core service and customer management functionality completed, with ASN management work in progress. Expected completion Q1 2023.
- Pre-validate all RPKI changes to avoid errors
  - Route management pre-validation tested successfully and final UX review changes underway. Expected completion Q1 2023.

##### Goals deferred

- None.

[roadmap.apnic.net](https://roadmap.apnic.net)



## 2B. Registry Products – continued

### 2B.4. Registry re-architecture →|

A prototype of an APNIC Registry API was developed to support the retrieval of delegation information, as well as the management of whois records, reverse DNS records, ROAs, and routes.

The prototype API was deployed for public testing, with production development scheduled to start in early 2023.

The reimplementing of the internal registry in Java was deferred to 2023 due to re-prioritization of resources.

### 2B.5. Readiness for five-9s availability for highly critical services →|

Investigation began into the requirements to improve availability of highly critical APNIC services to 99.999%. RPKI, whois, RDAP, and reverse DNS were identified as highly critical services.

Working with an external consultant, a gap analysis for the RPKI service was completed, including considerations for infrastructure upgrades, software architecture, and process improvements in software development and IT operations.



## 2B. Registry Products – continued

### SUCCESS INDICATORS – 2B

Targets	Results	Status
Maintain APNIC Registry Management System (ARMS) availability of at least 99.99%	99.99%	●
Maintain whois, RDAP, RPKI, RDNS and IRR availability of at least 99.99%	99.99%	●
Update APNIC RDAP to comply with the RIR RDAP profile	Completed	●
Migrate RDNS API services to CentOS 7	Scheduled for Q1 2023	●
Achieve all 2022 goals, according to the <a href="#">Registry Products Roadmap</a>	3 completed 3 in progress 0 deferred	●
Progress development of a Registry API with a completion target of 2023	Development milestones achieved	●
Progress reimplementation of the internal registry in Java with a completion target of 2023	Deferred to 2023	●
Achieve readiness to implement 5x9s by the end of 2022	Completed	●





# 2C. Policy Development

## OPERATIONS

### 2C.1. Policy development

The APNIC Policy SIG considered the following proposals in 2022.

Proposal	Result
<b>prop-141: Change maximum delegation size of IPv4 from 512 (/23) to 768 (/23+/24) addresses</b>	Draft presented for discussion only and not considered for consensus.
<b>prop-142: Unify Transfers Policies Text</b>	Reached consensus and endorsed by the EC for adoption. Implemented.
<b>prop-143: ASN to Customer</b>	Reached consensus and endorsed by the EC for adoption. Implemented.
<b>prop-144: Experimental Proposal Allocation</b>	Reached consensus and endorsed by the EC for adoption. Implemented.
<b>prop-145: Single Source for Definitions</b>	Reached consensus and endorsed by the EC for adoption.
<b>prop-146: Aligning the Contrast</b>	Reached consensus and endorsed by the EC for adoption.
<b>prop-147: Historical Resources Management</b>	Did not reach consensus and returned to the mailing list.
<b>prop-148: Leasing of Resources is not Acceptable</b>	Did not reach consensus and returned to the mailing list.

[www.apnic.net/policy](http://www.apnic.net/policy)

## RESOURCING

	Budget	Actual
PY	0.75	0.71
Expenses	580,881	589,891
CAPEX	-	-



## 2C. Policy Development – continued

### 2C.2. Policy implementation

Prop-142, -143, and -144 were implemented. Prop-142 required extensive internal updates to properly log each of the transfer types, along with a detailed review/adjustment of the new log to ensure consistency with the previous log.

### 2C.3. Policy analysis

Impact assessments for the nine policy proposals discussed at APNIC 53 and 54 were shared with the Policy SIG mailing list.



## 2C. Policy Development – continued

### SUCCESS INDICATORS – 2C

Targets	Results	Status
<b>Achieve SIG Chair Support satisfaction of at least 6/7</b>	6.8 out of 7	●
<b>Achieve PDP satisfaction of at least 5.75/7 in the APNIC Survey</b>	6.16	●
<b>Participate in all NIR OPMs</b>	2 out of 2	●
<b>Met 100% of implementation timelines</b>	100% met	●
<b>Publish a policy proposals analysis before each Open Policy Meeting (OPM)</b>	2 out of 2 published	●



## 3. DEVELOPMENT



### OBJECTIVES

Invest in sustainable development of the regional Internet community, industry and infrastructure.  
Build capacity for best-practice Internet operations across the Internet technical community.

### WORKSTREAMS

- 3A. APNIC Conferences
- 3B. Foundation Support
- 3C. Community Engagement
- 3D. Community Participation
- 3E. APNIC Academy
- 3F. Infrastructure Support

### DEVELOPMENT - SUMMARY

	Budget	Actual
PY	34.60	27.21
Expenses	11,210,815	8,714,029
CAPEX	128,000	54,413



## 3A. APNIC Conferences

### OPERATIONS

#### 3A.1. APNIC conferences

APRICOT 2022 (incorporating APNIC 53) was held online from 21 February to 3 March 2022. This was the third 100% online conference that APNIC managed due to the COVID-19 pandemic.

The event welcomed 886 remote attendees (via Zoom) in total, including 519 attendees that attended the tutorial week. There were an additional 3,854 views on YouTube.

An election for three available APNIC EC positions was held at APNIC 53 with Sumon Ahmed Sabir (4,084 votes), Kams Sze Yeung (3,238 votes), and Achie Atienza (3,057 votes) elected for two-year terms.

APNIC 54 was held in a hybrid format in Singapore and online from 8 to 15 September 2022, and was co-located with APriGF 2022 and APSIG 2022, with SGN0G 9 held nearby. There were 1,158 participants in total (563 in-person and 595 via Zoom), as well as 2,565 views on YouTube. A revised program structure was developed to suit both online and face-to-face audiences.

Several community meetings were held at the conferences from partner organizations including, DotAsia, APIX, APStar, and APNG.

Both conferences were well-received, achieving Net Promoter Scores (NPS) of 60 and 65 respectively

[conference.apnic.net](https://conference.apnic.net)

### RESOURCING

	Budget	Actual
PY	4.15	4.70
Expenses	1,288,628	1,585,093
CAPEX	43,000	51,197



## 3A. APNIC Conferences – continued

	APRICOT 2022	APNIC 54
Total number of remote participants (Zoom)	886	595
In-person participants	-	563
Economies represented	64	69
YouTube views	3,854	2,565
YouTube hours viewed	870.49	537.34





## 3A. APNIC Conferences – continued

### SUCCESS INDICATORS – 3A

Targets	Results	Status
Achieve total attendance of 1,200 (face-to-face and online) across two conferences	2,044	●
Achieve participant satisfaction of at least 90% at each conference	96% and 95%	●
Achieve Net Promoter Score of at least 50 at each conference	NPS 60 and 65	●



## 3B. Foundation Support

### INVESTMENTS

#### 3B.1. Foundation support →

Nine Secretariat staff were seconded to the Foundation, and APNIC staff continued to provide support on an as-needed basis, with all direct costs recovered.

APNIC continued to provide hosting and technical support for administrative, project and financial platforms used by the Foundation.

#### apnic.foundation

### RESOURCING

	Budget	Actual
PY	1.31	1.40
Expenses	264,777	0
CAPEX	-	-





# 3C. Community Engagement

## OPERATIONS

### 3C.1. Technical community support

APNIC participated and supported 30 technical community events, including 22 Network Operator Group (NOG) events during 2022, providing sponsorship, speakers, training, and technical support (see the Appendix for the full list of events and economies).

Staff also participated on the program committee for nine events, including APAN 53, INNOG 5, PHNOG, SANOG 38 and IDNOG 7, and helped organize LANOG.

### 3C.2. Security community support

APNIC supported and participated in 45 security community (and related) events, including providing sponsorship, speakers, training, and technical support (see the Appendix for the full list of events and economies).

APNIC also supported BtCIRT, CERT NZ, CERT Tonga, and KrCERT/CC for various activities.

## RESOURCING

	Budget	Actual
PY	4.71	5.75
Expenses	1,692,291	1,843,022
CAPEX	-	-



## 3C. Community Engagement – continued

### 3C.3. Internet organization cooperation

APNIC was responsible for Chairing the NRO EC and Coordination Groups (CGs) during 2022, with staff participating in 22 online meetings with the CGs and attending seven RIR meetings.

The NRO EC agreed on a new NRO Strategic Plan which includes three programs: RPKI, Cybersecurity and Government Engagement.

Staff participated in all ICANN meetings, with Paul Wilson speaking at the ICANN 75 opening ceremony, and all IETF meetings, with technical staff co-authoring drafts in the IETF SIDROPS (RPKI) and REGEXT (RDAP) working groups.

Staff also participated in the Internet Technical Advisory Committee (ITAC) to the OECD and the Internet Technical Collaboration Group (ITCG).

### 3C.4. Internet governance participation

APNIC co-organized four workshops at the IGF 2022 (three on Internet sanctions and Internet fragmentation and one on capacity building). Staff also participated in 19 meetings related to the IGF, including the Multistakeholder Advisory Group (MAG), IGF Policy Network on Internet Fragmentation, the IGF Support Association (IGFSA), and IGFSA General Assembly.

Staff participated in two joint sessions of APrIGF and APSIG 2022, and the APrIGF 2022 opening and closing plenaries (both of which were co-located with APNIC 54 in Singapore). Staff were also elected as co-convenors of the APrIGF program committee and participated in 76 APrIGF preparatory meetings covering overall direction, program, event arrangements, and fellowships.

Nine sub-regional and economy-level IGF events, including three youth IGFs and two Schools of Internet Governance events, were also supported (see the Appendix for the full list of events and economies).



## 3C. Community Engagement – continued

### 3C.5. Government engagement

APNIC engages with governments and inter-governmental organizations as a member of the technical community. Activities in 2022 included:

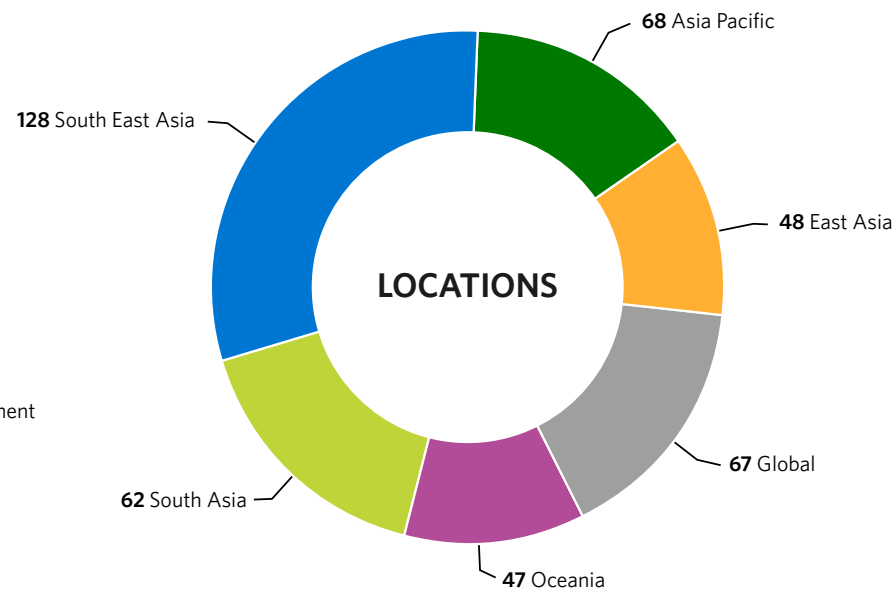
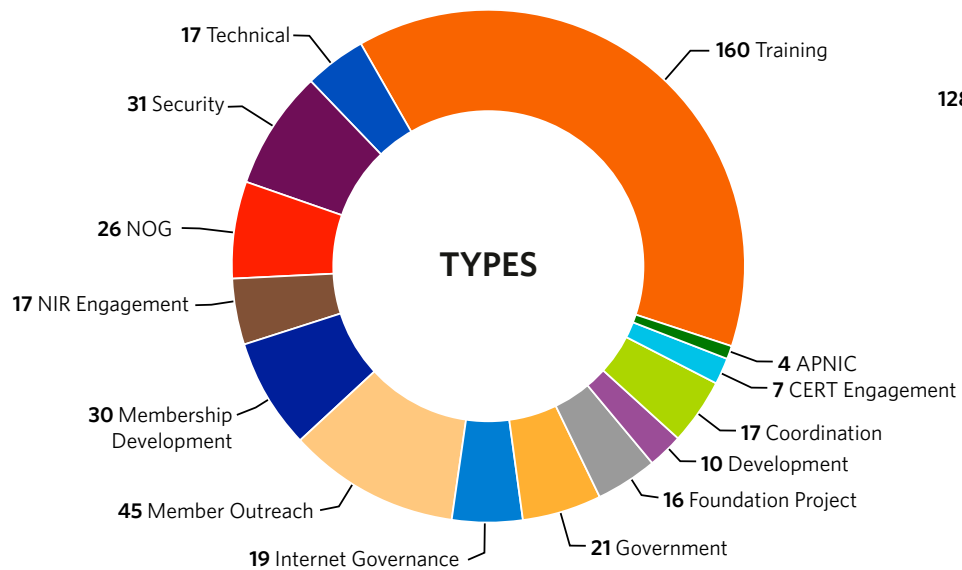
- Participating at the ITU Plenipotentiary Conference 2022 and other ITU standards and development meetings.
- Attending APT meetings, and providing technical training in two APT member states in collaboration with the APT Secretariat.
- Presenting on IPv6 at APEC TEL 64.
- Signing an MoU to collaborate with the Papua New Guinea Department of ICT on capacity building initiatives.
- Organizing training for Law Enforcement Agencies (LEAs) in Oceania and presenting at INTERPOL events.

APNIC also obtained UN accreditation to be an observer in the UN Open Ended Working Group (OEWG) informal consultations.



# 3C. Community Engagement – continued

## 3C.6. External relations coordination



Engagements are units of measurement for meaningful interactions by APNIC staff with the community through events. There are currently 15 types of engagements in APNIC, as shown on pages 51 and 52.







## 3C. Community Engagement – continued

### SUCCESS INDICATORS – 3C

Targets	Results	Status
Support at least 30 technical community events (opportunity permitting)	30 out of 30	●
Support at least one new/revived NOG in two sub-regions (if required)	1 supported	●
Support at least 12 security community events (opportunity permitting)	22 events	●
Support development of at least four new or existing CERTs/CSIRTs (if needed)	4 out of 4	●
Organize quarterly threat sharing community events	4 out of 4	●
Ensure APNIC is represented in all NRO EC and 'I-Star' coordination meetings	6 out of 6	●
Participate in all RIR Open Policy Meetings	7 out of 8	●
Organize at least three workshop proposals at APriGF 2022	Co-hosted conference	●
Support at least five national or sub-regional Internet governance events	11 events	●
Participate in at least 12 governmental or intergovernmental engagements	22 engagements	●
Support at least three governmental capacity-building events	3 out of 3	●
Increase ER touchpoints by at least 5% from 456 in 2021	1,200 touchpoints (163%)	●
Achieve at least 250 APNIC engagements in 2022	420 engagements	●



# 3D. Community Participation

## OPERATIONS

### 3D.1. Community-led processes

Special Interest Group (SIG) meetings at APNIC conferences attracted 929 participants. Two intersessional online SIG meetings and policy readout webinars were also held and attracted 55 participants.

The Policy Document Review Working Group (WG) (formed in 2021) completed its work at APNIC 53. Consensus was reached on seven WG policy proposals across APNIC 52 and 53.

Five meetings of the APNIC EC were held with elected representatives of the SIGs, IANA RC, NRO NC, APIX, APNOG and Secretariat staff. Discussions covered APNIC and APRICOT conferences, the 2022 APNIC Survey and community election processes.

At the elections completed at APNIC 54:

- Gaurav Kansal was elected to the NRO NC and as the NIR SIG Co-Chair, both for two-year terms.
- Bikram Shrestha was elected at the Cooperation SIG Co-Chair for a two-year term.
- Anupam Agrawal was elected as the Policy SIG Co-Chair for a two-year term.

Nicole Chen was reappointed by the EC to the second NRO NC seat for a one-year term beginning 1 January 2023.

[www.apnic.net/sigs](http://www.apnic.net/sigs)

## RESOURCING

	Budget	Actual
PY	1.95	2.44
Expenses	436,317	410,275
CAPEX	-	-

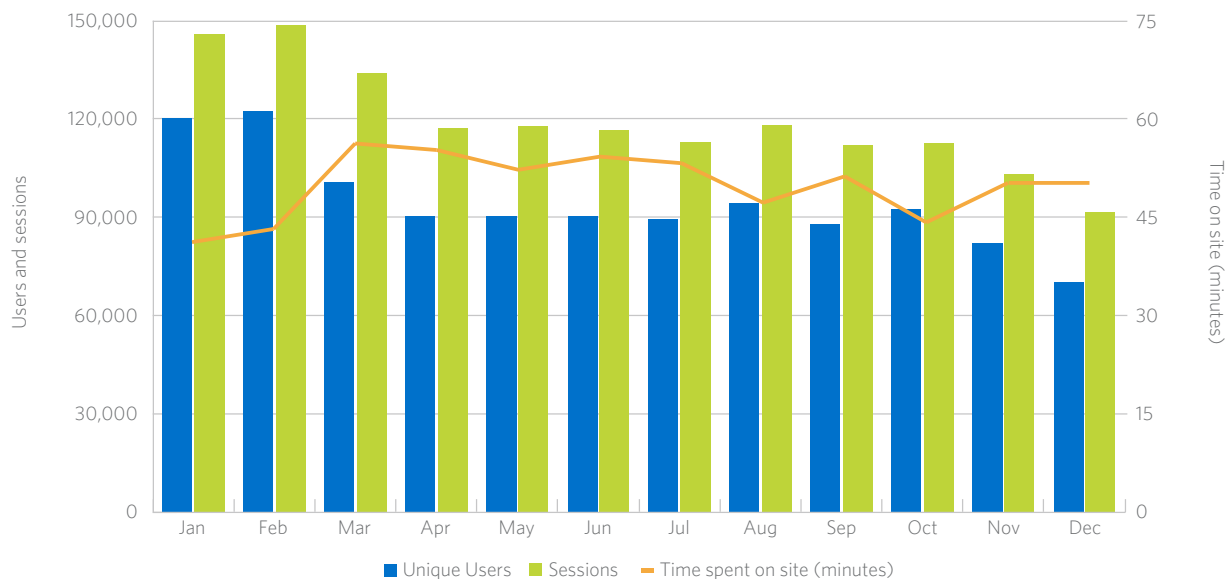


# 3D. Community Participation – continued

## 3D.2. Online participation

Following a higher start to the year, visitor numbers to apnic.net remained consistent from April-October before declining. The top five visitor economies were the United States, New Zealand, China, India, and Australia..

APNIC.NET WEBSITE VIEWS



APNIC also launched a Minimum Viable Product (MVP) of Orbit, the online community platform, at APNIC 54 (See 3D.4).





## 3D. Community Participation – continued

### 3D.3. Encouraging newcomers and diversity

Thirty fellows (15 female and 15 male; 19 professional and 11 youth) were selected from 371 applicants for the 2022 fellowship program. The program combined the successful online program used in 2021 with attendance and full participation at APNIC 54 in Singapore. An additional 14 fellows from the 2021 program also attended APNIC 54.

Twelve fellowship webinars were delivered with 91.5% overall attendance, and each fellow completed an average of three APNIC Academy courses. There were also 11 mentoring sessions held between 16 fellows and 11 mentors drawn from the community. Twenty-seven fellows fully completed the fellowship program, a graduation rate of 87%.

An Inclusion in Tech joint session with APriGF was held at APNIC 54, along with a NextGen session for young newcomers to the APNIC community.

Forty-six percent of APRICOT 2022 attendees (406) and 44% of APNIC 54 attendees (509) were newcomers.



## 3D. Community Participation – continued

### INVESTMENTS

#### 3D.4. Online community platform →

APNIC developed and launched a new online community platform, 'Orbit', that integrates fully with existing mailing lists.

Mailman 3's 'Hyperkitty' platform was selected, with a range of new features developed including a central news feed, user profiles, redesigned landing pages and a new theme applied to all pages. All former Mailman lists were migrated to Orbit. The MVP was launched at APNIC 54 and improvements will continue in 2023.

[orbit.apnic.net/news-feed](https://orbit.apnic.net/news-feed)



## 3D. Community Participation – continued

### SUCCESS INDICATORS – 3D

Targets	Results	Status
Achieve at least 850 online SIG participants across two conferences	929 participants	●
Achieve at least 120 online participants across at least four intersessional SIG meetings	2 meetings/55 participants	●
Achieve SIG satisfaction of at least 5.8/7 in the APNIC Survey	6.00	●
Achieve at least 500 registered users of the APNIC community platform	8,766 users	●
Attract at least 400 newcomers to APNIC conferences	915 newcomers	●
Achieve at least 50% female and 30% youth participation in 2022 Fellowships	50% female, 37% youth	●
Achieve a fellowship graduation of at least 80%	87%	●
Achieve a fellowship program NPS of at least 80	NPS 100	●



# 3E. APNIC Academy

## OPERATIONS

### 3E.1. Academy product management

The APNIC Academy published a new self-paced OSPF course, including 56 topics and 10 hours of new learning material.

Twelve new virtual labs were added, including:

- DHCPv6-PD
- RPKI Lab with RPKI-Prover
- RPKI Lab with FORT
- Practical Packet Analysis
- IPv6 Security
- MPLS and Segment Routing: MPLS LDP and SR
- NMM SNMP Libre NMS & RRD
- Log Management and Flow Monitoring
- BGP Link State
- Security Monitoring and Analysis
- IPv4/IPv6 Dual-Stack
- SRv6

Content for the new Introduction to Cybersecurity and BGP self-paced courses was also developed.

A new version of eduroam was deployed for eligible APNIC Academy users, including eduroam account management.

## RESOURCING

	Budget	Actual
PY	19.58	11.93
Expenses	5,079,961	4,009,932
CAPEX	25,000	3,217



## 3E. APNIC Academy – continued

### 3E.2. Instructor-led training

With travel resuming in 2022, instructor-led training could be provided both face-to-face and online. Training was conducted at 30 technical community events, including 11 NOGs.

A total of 141 courses were delivered to 3,849 participants, with an additional 18 webinars attracting 1,048 participants. Eight online workshops and two-in-person tutorials were also conducted with NIRs.

Twenty-one RPKI tutorials and ROA sessions led by Retained Community Trainers (RCTs) were completed. An RPKI Deployathon was also held before AusNOG 2022. (see 3E.6).

Updates were made to five courses (network security, RPKI/ ROV, DNS/DNSSEC, NMM and IPv6), and Open Lab sessions on routing, Linux Basics, IPv6 and DNS began in October to provide more lab time to participants.

### 3E.3. Self-paced training

Trainees completed 2,010 courses (4,414 contact hours) and launched 11,906 labs (12,125 hours completed) on APNIC Academy in 2022. The online platform now has 25,795 accounts after 8,385 new accounts joined.

[academy.apnic.net](https://academy.apnic.net)



## 3E. APNIC Academy – continued

### 3E.4. Community Trainers network

A new Retained Community Trainer (RCT) program was introduced, and six community members (based in the Philippines, Cambodia, Mongolia, Fiji, Nepal and Sri Lanka) were recruited. There are currently 30 active volunteer CTs from 15 economies.

RCTs conducted monthly economy-focused RPKI and IPv6 awareness sessions and helped facilitate online Open Labs.

[academy.apnic.net/en/community-trainers](https://academy.apnic.net/en/community-trainers)

### 3E.5. Technical assistance

Technical assistance was provided to 10 Members across nine economies, including:

- Providing guidance on a vulnerability reporting program (VRP) with an Australian Member.
- Assisting a Malaysian Member with RPKI validator configuration.
- Supporting an ISP in Pakistan to clean up IPv6 and IPv4 BGP announcements.
- Assisting the Papua New Guinea government to migrate their network equipment to Cisco.
- Helping Members via the APNIC Academy technical assistance platform in Myanmar, Malaysia, New Zealand, Bangladesh, India, and Hong Kong on RPKI, reverse DNS, routing, BGP, IXP and IPv6 issues.

Following the volcanic eruption in late December 2021, APNIC helped Tonga re-establish communication to its outer islands via satellite, and sourced and configured a donated Cisco ASR router to the Tonga Communications Corporation. Assistance to .FJ was also provided to help solve a DNSSEC issue.

[academy.apnic.net/en/technical-assistance](https://academy.apnic.net/en/technical-assistance)



## 3E. APNIC Academy – continued

### 3E.6. RPKI awareness and deployment support

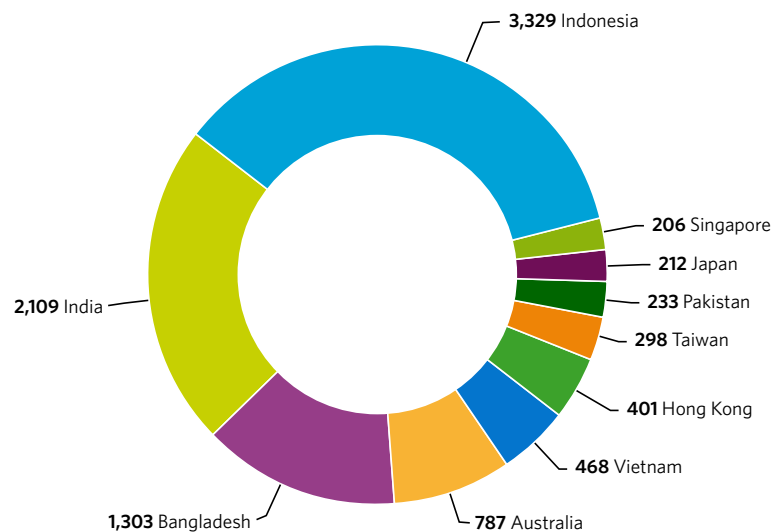
Twenty-six RPKI/ROV tutorials were conducted by RCTs in the Philippines, Cambodia, Mongolia, Fiji, and Nepal. Members in Fiji and the Philippines were proactively contacted and assisted to clean up invalid routes. APNIC also conducted an RPKI Deployment ahead of AusNOG 2022.

Fiji reached 99% ROA coverage and Cambodia achieved 91% ROA coverage following APNIC assistance provided to operators at local events.

Three RPKI deployment case studies were also published.

[www.apnic.net/rpki](http://www.apnic.net/rpki)

TOP 10 ECONOMIES WITH ROAs





## 3E. APNIC Academy – continued

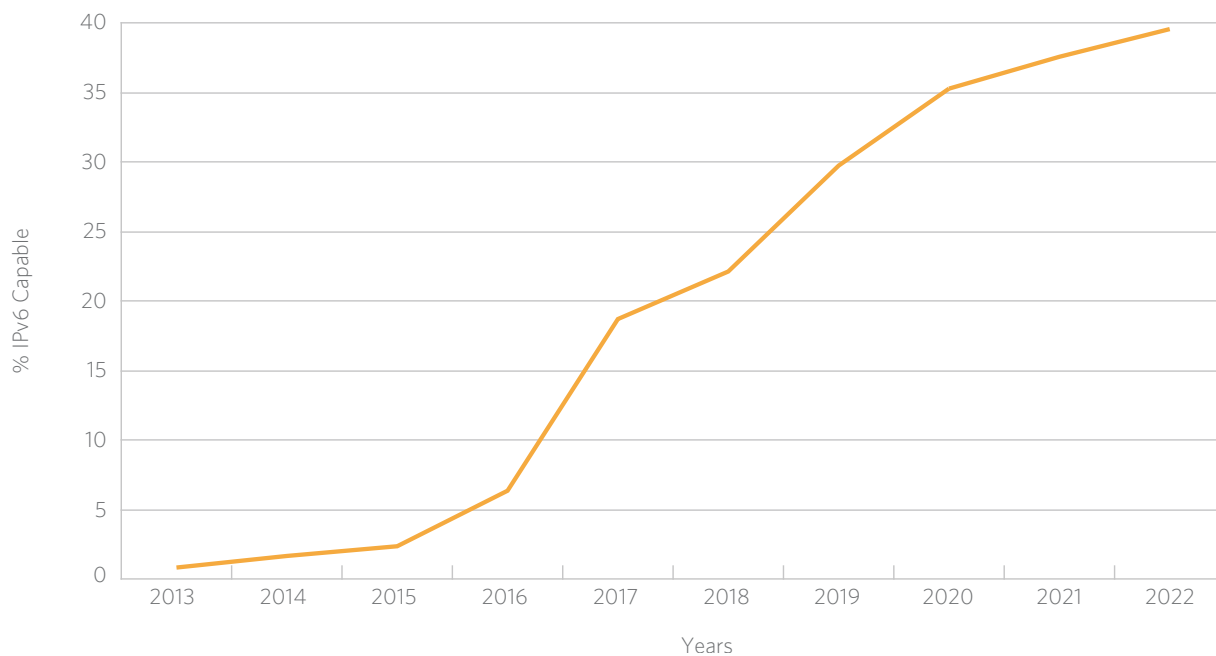
### 3E.7. IPv6 awareness and deployment support

IPv6 capability for the Asia Pacific region ended the year at 37.65%, as measured by APNIC Labs.

[www.apnic.net/ipv6](http://www.apnic.net/ipv6)

Seventeen IPv6 deployment focused training events were delivered, with two IPv6 deployment success stories and 23 IPv6 blog posts published.

IPv6 CAPABILITY PERCENTAGE





## 3E. APNIC Academy – continued

### INVESTMENTS

#### 3E.8. Academy product development →

##### Planned goals completed:

- Integration with Salesforce for improved registration, case management and reporting
  - Extended integration with Salesforce completed.
- Integration with Okta for better account provisioning of eduroam, eduGAIN and social logins
  - Okta integration complete for account provisioning.
- Migration of APNIC’s Training Wiki into the APNIC Academy platform
  - Migration completed with new course material functionality implemented.
- Establish central repository of all training materials
  - Central repository of content established for trainers.
- Improve mobile support for APNIC Academy and explore m-learning/mobile app support
  - Mobile experience improved on Academy.

##### Additional goals completed

- Improve virtual labs performance
  - Singapore datacentre now default location for all APNIC Academy virtual labs.
- Improve Academy site navigation
  - Implemented new ‘Omnibar’ and contextual navigation.

##### Goals in progress

- None

##### Goals deferred

- Recruitment of a Certification Project Officer to initiate the design of a new APNIC Certification Program.

[roadmap.apnic.net](https://roadmap.apnic.net)



## 3E. APNIC Academy – continued

### 3E.9. Curriculum for non-technical audiences →

Learning objectives and design documentation were completed for the online educational game, IPGO, that aims to help non-technical audiences better understand how the Internet works and encourage active participation in the Internet ecosystem.

Delays in game development have pushed back the minimum viable product launch until 2023.



## 3E. APNIC Academy – continued

### SUCCESS INDICATORS – 3E

Targets	Results	Status
Maintain Academy platform availability of at least 99.95%	99.99%	●
Achieve a rating of at least 6.00 for APNIC training in the APNIC Survey	6.40	●
Conduct at least 100 instructor-led tutorials / workshops	141 tutorials/workshops	●
Conduct at least 18 live webinars	18 out of 18	●
Achieve average training survey rating of 4/5	4.3 out of 5	●
Increase total self-paced online course usage by at least 30% from 3,340 hours in 2021	4,414 hours (32%)	●
Increase total virtual lab usage by at least 20% from 6,902 hours in 2021	12,125 hours (76%)	●
Increase registered users of the APNIC Academy by at least 25% from 17,018 in 2021	23,801 (40%)	●
Recruit at least 12 new retained CTs	6 out of 12	●



## 3E. APNIC Academy – continued

### SUCCESS INDICATORS – 3E CONTINUED

Targets	Results	Status
Recruit at least 10 new volunteering CTs	6 out of 10	●
Respond to all technical assistance requests within seven days	Achieved	●
Conduct at least two instructor-led RPKI/ROV tutorials/workshops per sub-region	26 conducted (14 SEA, 6 EA, 2 SA, 4 OC)	●
Achieve at least 90% ROA coverage for at least one additional economy per sub-region	2 economies	●
Publish at least three RPKI/ROV deployment case studies	3 out of 3	●
Conduct at least two instructor-led IPv6 deployment tutorials/workshops per sub-region	25 completed (10 AP, 5 EA, 7 SA, 3 SEA)	●
Publish at least two IPv6 deployment case studies	2 out of 2	●
Achieve all 2022 goals, according to the <a href="#">Academy Products Roadmap</a>	7 completed 0 in progress 1 deferred	●
Release phase 1 of IPGO (an MVP) by June 2022	Delayed until 2023	●



## 3F. Internet Infrastructure Support

### OPERATIONS

#### 3F.1. Internet infrastructure deployment

The Maldives IX (MVIX) was launched, with Route Origin Validation (ROV) implemented, following a training workshop and technical assistance.

Work continued with PKIX Lahore on route server deployment and RPKI for their IXP, and discussions began for an IXP in Kiribati and Timor Leste.

Equipment delays impacted root server deployment in 2022, including M-Root servers ([see 3F.3](#)).

#### 3F.2. Community Honeynet and Security Threat Sharing Platform

The Community Honeynet project expanded with the addition of five new partners from Bhutan, Laos PDR, and Mongolia, bringing the total to 20.

The platform was upgraded to support an increased number of sensors and data processing, with the number of honeypot sensors increasing to 100.

Quarterly threat sharing meetings were held with partners and the community to discuss the latest observations, and presentations related to the threats observed were made at three events (TWNIC, MNNOG and CNCERT/CC).

APNIC also mentored students from the Royal Bhutan University, who used the honeynet data for their projects.

### RESOURCING

	Budget	Actual
PY	2.90	1.00
Expenses	2,448,842	865,707
CAPEX	60,000	-



# 3F. Internet Infrastructure Support - continued

## INVESTMENTS

### 3F.3. M-root deployment support →

M-root server deployments in Guam, Kuala Lumpur, Singapore and Bangkok were completed.

Equipment delivery delays continued to impact agreed deployments of servers in seven locations (Dhaka, Jakarta, Mumbai, Ulaanbaatar, Kathmandu, Manila and Kaohsiung). Negotiations were in progress in nine other locations.





## 3F. Internet Infrastructure Support - continued

### SUCCESS INDICATORS - 3F

Targets	Results	Status
Support deployment of at least two new or upgraded IXPs	1 completed 2 in progress	●
Support at least four IXPs to deploy ROV	1 deployed 1 in progress	●
Deploy at least four root servers per sub-region, including M-root servers	2 out of 4 SEA 0 out of 4 SA 0 out of 4 EA 1 out of 4 OC	●
Deploy or upgrade at least one RIPE Atlas anchor per sub-region	1 out of 4	●
Increase the number of honeypot sensors by at least 60% from 60 in 2021	100 sensors (67%)	●
Increase the Community Honeynet and Security Threat Sharing Platform partners by at least 30% from 15 in 2021	20 partners (33%)	●
Complete 10 M-root server deployments commenced in 2021	4 out of 10	●
Identify and prepare at least 15 additional M-root server sites	7 out of 15 9 in negotiation	●



# 4. INFORMATION



## OBJECTIVE

Support Internet development with needed network information services, and research outcomes which are of demonstrated value to the community.

## WORKSTREAMS

- 4A. Information Products
- 4B. Research and Analysis

## INFORMATION - SUMMARY

	Budget	Actual
PY	9.74	8.67
Expenses	2,535,680	2,327,329
CAPEX	123,000	93,812





# 4A. Information Products

## OPERATIONS

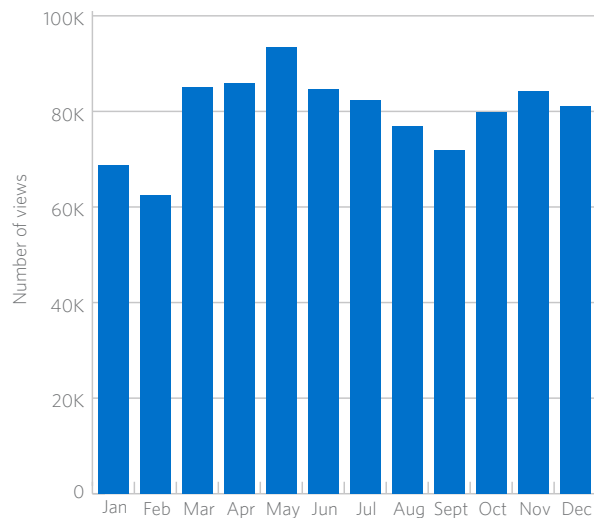
### 4A.1. APNIC Blog and podcast

The APNIC Blog averaged 79,707 unique views per month in 2022, a 16% increase on 2021's monthly average of 68,721. There were 211 Guest Posts, representing 60% of total opinion posts (an increase on 2021's 56%).

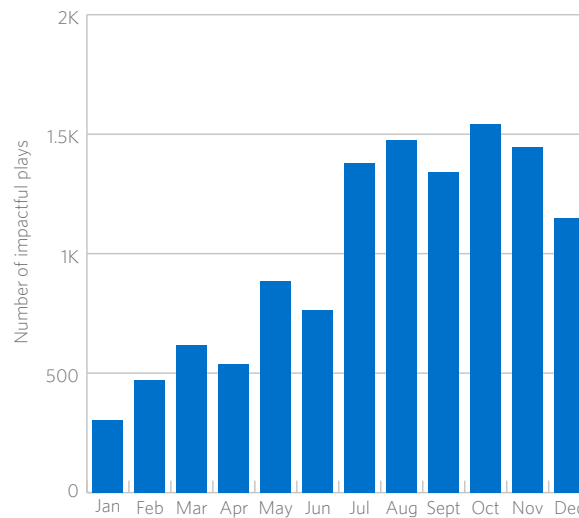
Twenty-five episodes of the 'PING' podcast were published, attracting 11,907 'impactful plays' (episode listens of 75% or longer), an average of 476 plays per episode.

[blog.apnic.net](https://blog.apnic.net)

**BLOG VIEWS**



**PODCAST IMPACTFUL PLAYS**



## RESOURCING

	Budget	Actual
PY	8.87	7.65
Expenses	1,459,082	1,402,246
CAPEX	-	-



# 4A. Information Products – continued

## 4A.2. Information product management

A significant increase in new users was achieved using paid search promotion for REX and NetOX, translating into an increased number of returning users.

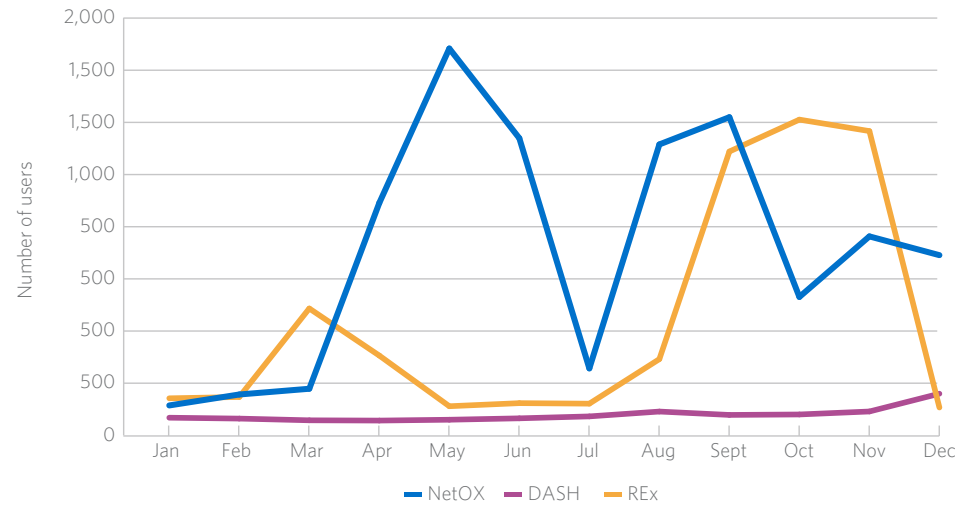
Availability of DASH, NetOX and REX was maintained at 99.99%.

[rex.apnic.net](http://rex.apnic.net)

[dash.apnic.net](http://dash.apnic.net)

[netox.apnic.net](http://netox.apnic.net)

MONTHLY NUMBER OF USERS





## 4A. Information Products – continued

### INVESTMENTS

#### 4A.3 Information product development →

##### Planned goals completed

- Complete a joint APIX survey around a benchmarking service
  - Survey completed.
- Add routing and suspicious traffic alerts to DASH
  - Deployed alerts through email notifications, SMS and Slack.
- Develop a common API and backend system to provide notifications as a service for APNIC products
  - Notifications system deployed for email, SMS and Slack.
- Improve NetOX comparison tools
  - Deployed feature to allow multiple Internet number resources to be compared using different widgets.
- Provide non-ASN holders access to DASH
  - Routing information features in DASH now available.

##### Additional goals completed

- Add routing information pages to DASH
  - Deployed routing status information to highlights inconsistencies in BGP, RPKI and IRR data.
- REx user interface improvements
  - Deployed several UX/UI improvements based on feedback. Add RPKI and DNSSEC measurement data to REx

[roadmap.apnic.net](https://roadmap.apnic.net)



## 4A. Information Products – continued

### 4A.2 Information product development →

#### Goals in progress

- Expand REX to cover global RIR delegation data and global IPv6 data
  - UI design and implementation finalized, with the backend implementation to be completed in Q1 2023.

#### Goals deferred

- Add RPKI and DNSSEC measurement data to REX



## 4A. Information Products – continued

### SUCCESS INDICATORS – 4A

Targets	Results	Status
Achieve average of at least 70,000 Blog views per month	79,707	●
Maintain Blog Guest Post ratio between 45-65%	60%	●
Achieve at least 4,000 podcast listens	11,907	●
Achieve a Blog satisfaction rating of at least 5.95/7 in the APNIC Survey	6.16	●
Maintain Information Product availability of at least 99.95%	99.99%	●
Reach the following average users per month: REx: 1,000 users per month DASH: 500 users per month NetOX: 1,000 users per month	REx: 2,210 DASH: 394 NetOX: 3,559	●
Achieve a NPS of 60+ for all products	REx: 32 DASH: 71 NetOX: 57	●
Maintain a usability score of at least 4.5/5 for all products	REx: 4.3 DASH: 4.4 NetOX: 4.6	●
Achieve all 2022 goals, according to the <a href="#">Information Products Roadmap</a>	7 completed 1 in progress 1 deferred	●



## 4B. Research and Analysis

### OPERATIONS

#### 4B.1. Conducting research and measurements

APNIC Labs completed new measurements on the use of IPv6 as a transport protocol for the DNS and IPv6 Extension Header handling (including fragmentation). The analysis of IPv4 and IPv6 advertised, unadvertised and reserved address pools over time continued.

DNS research included analysis of the handling of large DNS responses, adoption of DOH, and DNS query patterns. Measurement of QUIC (and HTTP/3) use continued, following the release of beta software that adds QUIC support to NGINX servers.

The annual reporting on the state of BGP was published, with work continuing on automated BGP anomaly detection.

#### 4B.2 Research cooperation

APNIC entered into a cooperative research program with ISOC in support of MANRS, providing a feed of routing data. Measurements on aspects of the DNS and DNSSEC were also provided to ICANN as part of a cooperative research agreement.

Research with Cloudflare continued on the characteristics of DNS query traffic presented to the Cloudflare 1.1.1.1 open recursive resolver.

#### 4B.3 Sharing research outcomes

A total of 47 research blog articles and 12 podcasts were published, with 41 presentations on research findings shared at technical forums globally.

### RESOURCING

	Budget	Actual
PY	0.87	1.02
Expenses	1,076,598	925,083
CAPEX	123,000	93,812



## 4B. Research and Analysis – continued

### SUCCESS INDICATORS – 4B

Targets	Results	Status
<b>Undertake at least two significant cooperative research activities</b>	3 activities	●
<b>Publish at least 12 articles or reports on resource outcomes</b>	47 articles	●
<b>Present at least 12 research presentations, including at least two at APNIC conferences</b>	41 presentations	●



# 5. CAPABILITY



## OBJECTIVES

Sustain a healthy and resilient organization.  
 Develop a strong service culture driven by people committed to APNIC's vision and values.  
 Provide stable and secure technical infrastructure to support APNIC operations and services.

## WORKSTREAMS

- 5A. Internal Technical Infrastructure
- 5B. Finance and Business Services
- 5C. Employee Experience
- 5D. Governance

## CAPABILITY - SUMMARY

	Budget	Actual
PY	37.78	36.14
Expenses	10,543,000	10,574,953
CAPEX	988,300	645,007





# 5A. Internal Technical Infrastructure

## OPERATIONS

### 5A.1. Architecture and technical coordination

Technology platforms were reviewed with particular attention to the end of life of CentOS 7 and JDK versions. CentOS 7 will be replaced with RedHat Enterprise Linux in 2023.

An initial metrics scanner to improve vulnerability scanning is now operational.

Work to centralize internal authentication and authorization was completed in 2022 for deployment in early 2023.

### 5A.2. Network and infrastructure operations

Availability of critical APNIC services was maintained at 99.99% during the year (see breakdown below).

Progress continued on the deployment of a shared Point of Presence (PoP) in the Singapore SG1 datacentre for both critical APNIC services and an M-root global anycast node

#### Core system uptime

FTP	100%
MyAPNIC	99.99%
RDNS	100%
RDNS DNSSEC Validity	100%
Whois	99.99%
RPKI	99.99%
RDAP	99.99%

## RESOURCING

	Budget	Actual
PY	16.81	15.16
Expenses	4,066,639	3,356,536
CAPEX	560,800	559,034



# 5A. Internal Technical Infrastructure – continued

## 5A.3. System and platform operations

RPKI improvements included deploying RPKI RRDP in APNIC’s Cloudflare and Google Cloud CDN instances, and the deployment of a redundant Hardware Security Module (HSM) for RPKI to allow data centre failover.

New RDNS anycast nodes were deployed in Mumbai, Bangalore, Tokyo, Melbourne, San Jose, New Jersey, and Miami to improve performance.

As part of the Orbit development process, all community mailing lists were migrated to Mailman 3, with Okta SSO support. The annual DNSSEC key rollover was also completed.

Average data centre bandwidth usage (Mbps)	
AU edge inbound	99.3
AU edge outbound	280
JP edge inbound	21.9
JP edge outbound	97

Average query rates (per second)	
Whois	467.1
RDAP	66.38
RPKI (RSYNC and RRDP)	39.52
FTP	0.28
MyAPNIC	0.53



## 5A. Internal Technical Infrastructure – continued

### 5A.4. Internal security operations

APNIC successfully achieved ISO 27001 Information Security Management System (ISMS) certification.

HackerOne was selected to support APNIC's Vulnerability Reporting Program (VRP) and now provides continuous penetration testing.

The DNS Certification Authority Authorization (CAA) for APNIC domains was also published to prevent unauthorized certificate creation from unlisted CAs.

### 5A.5 Enterprise applications and IT support

Sage People HR management was deployed to replace older systems. Other system improvements included replacing the authentication process for the RT application with Okta, and migration of internal Confluence servers to Atlassian Cloud.



## 5A. Internal Technical Infrastructure – continued

### 5A.6. Security infrastructure upgrades

A range email of security improvements were completed, including:

- SMTP TLS reporting (RFC 8460).
- Deployment of the MTA-STS email standard to prevent downgrade attacks on inbound email delivery (RFC 8461).
- Sender Policy Framework (SPF) to publish lists of permitted senders for all APNIC email domains (RFC 7208).
- Use of MXToolbox and Mailhardener to monitor SPF, DMARC, and TLS.
- Outbound emails now use the Domain Keys Identified Mail (DKIM) standard digital signature in the header.

The APNIC DANE TLSA record is now using a public certificate, and a project team began work on privileged access management and improved user authentication as part of a zero-trust network and server access initiative.

Two-factor authentication, with local-only user access, was also deployed for the critical services backup system.



## 5A. Internal Technical Infrastructure – continued

### SUCCESS INDICATORS – 5A

Targets	Results	Status
Review technology recommendations once per quarter	Completed	●
Report quarterly on architectural decisions and directions	Completed	●
Complete quarterly data centre failover and backup recovery tests	Completed	●
Respond to all critical incidents within 20 minutes	No critical incidents	●
Maintain availability of 99.99% for critical APNIC services and 99.95% for less-critical services	Both 99.99%	●
Deploy additional Hardware Security Module (HSM) for High Availability (HA) group in multiple data centres	Completed	●
Completed CentOS migration plan	Completed	●



## 5A. Internal Technical Infrastructure – continued

### SUCCESS INDICATORS – 5A - CONTINUED

Targets	Results	Status
Deploy redundant load balancers	Completed	●
Achieve ISO27001 certification	Completed	●
Mitigate all critical vulnerability reports within seven days and resolve within 30 days	No critical vulnerability reports	●
Meet SLA of two business-day response for internal IT support	SLA met	●
Complete automation of patch management	Completed	●
Complete email business rule deployment using standard best practice	2023 completion	●
Implement improved user authentication and access management system	2023 completion	●



# 5B. Finance and Business Services

## OPERATIONS

### 5B.1. Internal knowledge management

Migration of document management to a new SharePoint instance was completed, including internal administrative and HR documentation. The old internal site was decommissioned.

### 5B.2. Financial services

The annual audit of APNIC’s 2021 financial accounts was completed by Deloitte and presented to the EC at APNIC 53.

APNIC’s request to renew its mutuality status for tax purposes was approved by the Australian Tax Office (ATO) by way of a Private Ruling. The Private Ruling extends APNIC’s mutuality status to 30 June 2027.

A risk tolerance review of the investment portfolio was undertaken and recommendations were presented by Credit Suisse to the EC.

A Member payments and billing survey was completed in September, with 183 responses from 25 economies, to identify improvements. Ninety percent of respondents rated their billing and payments experience with APNIC as 4 or 5 (out of 5).

## RESOURCING

	Budget	Actual
PY	12.09	12.59
Expenses	2,935,176	3,585,463
CAPEX	40,000	61,315



## 5B. Finance and Business Services – continued

### 5B.3. Business services

Improvements were made to the travel booking and risk management procedures, with travel requests migrated to Salesforce to align with audit and expense policies.

A new set of 'Eco-APNIC' standards were introduced for APNIC promotional items.

### 5B.4. Business intelligence and data analytics

Work on automating report content continued, with automated scripts developed to prepare data from multiple systems and generate standardized charts and visualizations.





## 5B. Finance and Business Services – continued

### INVESTMENTS

#### 5B.5 Data management and governance →

A data management and governance system based on Certus/IRIS was selected and implemented, with staff trained by the vendor on modelling and data warehouse best practices. Data ingestion pipelines are being developed and tested on the new platform.

A graph database is in development, built on the Neo4J Aura cloud platform, integrating data from routing tables, whois/RDAP, RPKI, reverse DNS, and other sources in future. Practical applications have been found in forensic analysis of Internet resource usage. Live BGP data ingestion into Neo4J is being deployed.

APNIC Membership and Registry data is ingested into the data vault daily, and reports and chart data are sourced from it.



## 5B. Finance and Business Services – continued

### SUCCESS INDICATORS – 5B

Targets	Results	Status
Complete migration of knowledge management systems during Q1 2022	Completed	●
Achieve a successful audit of APNIC's annual financial accounts	Completed	●
Maintain all Office facilities to established annual schedule	Completed	●
Audit travel requests and expense transactions for policy alignment	Completed	●
100% automation of monthly Secretariat reporting data/charts from the BI system	60% complete	●
Data model and governance are documented and implemented	50% complete	●
Data ingestion system established and working effectively	30% complete	●



# 5C. Employee Experience

## OPERATIONS

### 5C.1. Organizational development

Biannual 'People Pulse' surveys were conducted in April and November, recording staff engagement scores of 83% and 82% respectively. This exceeded the global benchmark of 76%.

A career pathway framework was drafted to support a comprehensive succession plan, and executive coaching commenced in Q4.

### 5C.2. Work environment management

Flooding in Brisbane in March caused subsidence damage to the APNIC office carpark. Remedial work will be completed in 2023.

All government guidelines for COVID-infected staff were observed and staff were provided with necessary support.

## RESOURCING

	Budget	Actual
PY	7.19	6.14
Expenses	2,760,946	2,677,504
CAPEX	387,500	24,658



## 5C. Employee Experience – continued

### 5C.3. Talent attraction and retention

APNIC filled 30 permanent roles (either budgeted in the workforce plan or replacements), four contractor roles and engaged eight Community Trainers (3 VCT and 5 RCTs).

Talented training, software development and UX candidates were in high demand, contributing to staff turnover of 9.7% and some recruitment delays.

### 5C.4. People operations management

The deployment of Sage People allowed for the decommissioning of two older HR systems while improving functionality.

A refreshed careers page was developed along with the launch of a new recruitment video and employee value proposition.

The parental leave policy was also reviewed and improved to meet best current practice.



## 5C. Employee Experience – continued

### INVESTMENTS

#### 5C.5. APNIC workspace improvement →

The Cordelia St office refurbishment was completed within budget. The furnishings selected are able to be used in the future APNIC premises.

A project team is working on the requirements for the new premises, and workshops were conducted during the year with the appointed architects regarding the design.



## 5C. Employee Experience – continued

### SUCCESS INDICATORS – 5C

Targets	Results	Status
Complete Agile adoption by end of Q2 2022	Completed	●
Staff satisfaction ratings meet or exceed external benchmarks in 2022	Completed	●
An Internal Communications specialist is appointed by end of Q2 2022	Completed	●
Zero WHS incidents due to APNIC-controlled environmental factors	No incidents	●
All travellers meet travel safety requirements as per the Travel Health Policy	100% compliance	●
Maintain staff turnover rate within benchmark of 5-15%	9.7%	●
Fill all open roles within 90 days from advertisement	71-day average	●
Every advertised vacancy has a minimum of four simultaneous candidate sources	100% compliance	●
Complete deployment of all selected modules of the Sage People system	Completed	●
Demonstrate reduced cost of HR administration platforms	Completed	●
Payroll review completed by end of Q3 2022	Deferred to 2023	●
Complete all budgeted facility upgrades by end of Q3 2022	Completed	●



# 5D. Governance

## OPERATIONS

### 5D.1. Executive Council (EC) support

Sumon Ahmed Sabir, Kam Sze Yeung, and Achie Atienza were elected to the APNIC EC for two-year terms.

The annual EC satisfaction survey achieved a high level of satisfaction with support provided by the Secretariat to EC members.

### 5D.2 Corporate governance and legal

The Strategic Risk Register was updated and reviewed quarterly by the EC.

Recertification of ISO9001 was achieved. Additional work was required to document processes within product development, Academy, and training delivery, after the scope of recertification was expanded.

The whistleblower policy was implemented, and a dedicated external provider engaged to assist with deployment and management of reports.

All professional conduct-related policies were reviewed, and organizational expectations reinforced, to avoid the possibility of incidents.

A comprehensive workplace health and safety risk register was developed.

### 5D.3 Corporate social responsibility

All promotional items are now sourced from sustainable and ecologically-friendly suppliers, and presentations from environmentally friendly superannuation providers were delivered to staff.

## RESOURCING

	Budget	Actual
PY	1.68	2.25
Expenses	780,240	955,450
CAPEX	-	-



## 5D. Governance – continued

### SUCCESS INDICATORS – 5D

Targets	Results	Status
Achieve a satisfaction rating of at least 6/7 from a survey of EC members	6.8 out of 7	●
Update Strategic Risk Register quarterly	4 out of 4	●
Achieve full ISO 9001 quality management system recertification	Completed	●
Undertake quarterly BCP scenario testing	4 out of 4	●
Corporate social responsibility program developed and approved	In progress	●





## 2022 FINANCIAL REPORT BY ACTIVITY

Activity	PY			CAPEX			OPEX		
	Budget 2022	Actual 2022	Variance	Budget (AUD) 2022	Actual (AUD) 2022	Variance (AUD)	Budget (AUD) 2022	Actual (AUD) 2022	Variance (AUD)
Member Services	14.67	14.13	4%	2,989,124	2,799,996	-6%	-	-	0%
Membership Products	9.40	8.82	-6%	1,844,666	1,665,309	-10%	-	-	0%
Membership Reporting	0.87	1.34	54%	675,451	768,843	14%	-	-	0%
<b>Membership - Total</b>	<b>24.93</b>	<b>24.28</b>	<b>-3%</b>	<b>5,509,241</b>	<b>5,234,148</b>	<b>-5%</b>	<b>-</b>	<b>-</b>	<b>0%</b>
Registration Services	5.11	5.38	5%	772,183	794,949	3%	-	-	0%
Registry Products	9.30	7.35	-21%	2,612,611	2,344,851	-10%	230,000	34,590	-85%
Policy Development	0.75	0.71	-5%	580,881	589,891	2%	-	-	0%
<b>Registry - Total</b>	<b>15.16</b>	<b>13.45</b>	<b>-11%</b>	<b>3,965,675</b>	<b>3,729,692</b>	<b>-6%</b>	<b>230,000</b>	<b>34,590</b>	<b>-85%</b>
APNIC Conferences	4.15	4.70	13%	1,288,628	1,585,093	23%	43,000	51,197	19%
Foundation Support	1.31	1.40	7%	264,777	0	-100%	-	-	0%
Community Engagement	4.71	5.75	22%	1,692,291	1,843,022	9%	-	-	0%
Community Participation	1.95	2.44	25%	436,317	410,275	-6%	-	-	0%
APNIC Academy	19.58	11.93	-39%	5,079,961	4,009,931	-21%	25,000	3,217	-87%
Internet Infrastructure Support	2.90	1.00	-66%	2,448,842	865,707	-65%	60,000	-	-100%
<b>Development - Total</b>	<b>34.60</b>	<b>27.21</b>	<b>-21%</b>	<b>11,210,815</b>	<b>8,714,029</b>	<b>-22%</b>	<b>128,000</b>	<b>54,413</b>	<b>-57%</b>
Information Products	8.87	7.65	-14%	1,459,082	1,402,246	-4%	-	-	0%
Research and Analysis	0.87	1.02	18%	1,076,598	925,083	-14%	123,000	93,812	-24%
<b>Information - Total</b>	<b>9.74</b>	<b>8.67</b>	<b>-11%</b>	<b>2,535,680</b>	<b>2,327,329</b>	<b>-8%</b>	<b>123,000</b>	<b>93,812</b>	<b>-24%</b>
Internal Technical Infrastructure	16.81	15.16	-10%	4,066,639	3,356,536	-17%	560,800	559,034	0%
Finance and Business Services	12.09	12.59	4%	2,935,176	3,585,462	22%	40,000	61,315	53%
Employee Experience	7.19	6.14	-15%	2,760,946	2,677,504	-3%	387,500	24,658	-94%
Governance	1.68	2.25	34%	780,240	955,450	22%	-	-	0%
<b>Capability - Total</b>	<b>37.78</b>	<b>36.14</b>	<b>-4%</b>	<b>10,543,000</b>	<b>10,574,953</b>	<b>0%</b>	<b>988,300</b>	<b>645,007</b>	<b>-35%</b>
<b>Total</b>	<b>122.21</b>	<b>109.75</b>	<b>-10%</b>	<b>33,764,411</b>	<b>30,580,151</b>	<b>-9%</b>	<b>1,469,300</b>	<b>827,823</b>	<b>-44%</b>

Note: Some numbers presented in this chart may not add up precisely to the totals provided due to rounding.



## STATEMENT OF FINANCIAL POSITION

For a better understanding of APNIC Pty Ltd's financial position and performance, as represented by the results of its operations for the financial year ended 31 December 2022, the statement of financial position, and statement of income, should be read in conjunction with the annual statutory financial report and the audit report contained therein.

	2022 (AUD)	2021 (AUD)	% change
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	7,302,763	7,065,707	3%
Trade and other receivables	4,736,137	5,340,114	-11%
Other current assets	1,247,343	973,041	28%
<b>Total current assets</b>	<b>13,286,243</b>	<b>13,378,862</b>	<b>-1%</b>
<b>Non-current assets</b>			
Financial assets	33,161,465	36,728,127	-10%
Property, plant and equipment	6,803,390	6,726,988	1%
<b>Total non-current assets</b>	<b>39,964,855</b>	<b>43,455,115</b>	<b>-8%</b>
<b>Total assets</b>	<b>53,251,098</b>	<b>56,833,977</b>	<b>-6%</b>

## Liabilities

<b>Current liabilities</b>			
Trade and other payables	1,780,433	1,535,635	16%
Employee benefit liabilities	3,086,849	2,700,030	14%
Unearned revenue	12,379,552	12,243,100	1%
<b>Total current liabilities</b>	<b>17,246,834</b>	<b>16,478,765</b>	<b>5%</b>
<b>Non-current liabilities</b>			
Deferred tax liabilities	57,215	1,126,296	-95%
Employee benefit liabilities	361,744	383,353	-6%
<b>Total non-current liabilities</b>	<b>418,959</b>	<b>1,509,649</b>	<b>-72%</b>
<b>Total liabilities</b>	<b>17,665,793</b>	<b>17,988,414</b>	<b>-2%</b>
<b>Net assets</b>	<b>35,585,305</b>	<b>38,845,563</b>	<b>-8%</b>

## Equity

Contributed equity	1	1	0%
Retained earnings	35,585,304	38,845,562	-8%
<b>Total equity</b>	<b>35,585,305</b>	<b>38,845,563</b>	<b>-8%</b>



## STATEMENT OF PROFIT OR LOSS

	2022 (AUD)	2021 (AUD)	% change
<b>Revenue</b>			
Membership fees	24,717,563	24,252,513	2%
Non-member fees	259,616	257,209	1%
Reactivation fees	18,800	22,400	-16%
Sign-Up fees	258,750	302,750	-15%
Transfer fees	177,643	244,156	-27%
APNIC Foundation funded project receipts	3,762,837	0	0%
Sundry income	301,093	444,336	-32%
Foreign exchange gain/ (loss)	11,668	32,136	-64%
<b>Operating revenue</b>	<b>29,507,970</b>	<b>25,555,500</b>	<b>15%</b>
Investment income	771,547	865,457	-11%
<b>Total revenue</b>	<b>30,279,517</b>	<b>26,420,957</b>	<b>15%</b>
<b>Expenses</b>			
Communication expenses	633,469	634,015	-0%
Computer expenses	1,883,390	1,514,824	24%
APNIC Foundation funded project expense	3,702,680	-	0%
Contribution to ICANN	231,762	197,515	17%
Depreciation expense	652,215	652,409	-0%
Meeting and training expenses	597,066	88,786	572%
Office operating expenses	611,541	367,000	67%
Professional fees	1,971,461	2,212,253	-11%
Salaries and personnel expenses	16,887,009	15,707,940	8%
Sponsorship and publicity expenses	639,979	315,397	103%
Travel expenses	1,370,504	65,455	1,994%
Other operating expenses	1,399,075	1,063,656	32%
<b>Total expenses</b>	<b>30,580,151</b>	<b>22,819,250</b>	<b>34%</b>
<b>Operating surplus</b>			
<b>(Deficit) / Surplus before tax and fair value gain on financial assets</b>	<b>-300,634</b>	<b>3,601,707</b>	<b>-108%</b>
Fair value (Loss) / Gain on financial assets at fair value through profit or loss	-4,028,706	1,061,285	-480%
<b>(Deficit) / Surplus before income tax</b>	<b>-4,329,340</b>	<b>4,662,992</b>	<b>-193%</b>
Income tax benefit	1,069,082	5,687	18,699%
<b>(Deficit) / Surplus for the year</b>	<b>-3,260,258</b>	<b>4,668,679</b>	<b>-170%</b>



## CASH FLOW STATEMENT

	2022 (AUD)	2021 (AUD)	% change
<b>Cash flows from operating activities</b>			
Receipts from customers	30,277,150	25,549,754	18%
Payments to suppliers and employees	(29,522,394)	(21,374,400)	38%
Interest received	99,753	46,080	116%
<b>Net cash inflow from operating activities</b>	<b>854,510</b>	<b>4,221,434</b>	<b>-80%</b>
<b>Cash flows from investing activities</b>			
Proceeds from sale of property, plant and equipment	6,372	8,264	-23%
Payments for property, plant and equipment	(827,823)	(442,940)	87%
Investment distribution income	666,042	828,161	-20%
Purchase of available-for-sale financial assets	(462,044)	(4,630,434)	-90%
<b>Net cash (outflow) from investing activities</b>	<b>(617,454)</b>	<b>(4,236,949)</b>	<b>-85%</b>
<b>Net increase / (decrease) in cash and cash equivalents</b>	<b>237,056</b>	<b>(15,515)</b>	<b>-1,628%</b>
Cash and cash equivalents at the beginning of the year	7,065,707	7,081,222	0%
<b>Cash and cash equivalents at the end of year</b>	<b>7,302,763</b>	<b>7,065,707</b>	<b>3%</b>



# Supporters

APNIC acknowledges and thanks the following organizations for their generous support for APNIC conferences and training events.

## SUPPORTERS

(In alphabetical order)

APJII, Asosiasi Penyelenggara Jasa Internet Indonesia

APNIC Foundation

Asia Pacific Telecommunity (APT)

Asia Pacific Advanced Network (APAN)

APTLD

BKNIX

CNNIC, China Network Information Centre

DE CIX

Google

Huawei

ICANN

IDNIC, Indonesia Network Information Centre

Infloblox

Internet Governance Forum

Internet Society

IPv4 Mall

IPv4.Global

IRINN, Indian Registry for Internet Names and Numbers

ISPAB, Internet Services Providers Association of

Bangladesh

JPNIC, Japan Network Information Centre

KDDI Foundation

Kentik

MCMC, Malaysian Communications and Multimedia

Commission

MOTC, Ministry of Transportation and Communications

MyRepublic

NIXI

Paraqum Technologies

PCTA, Philippine Cable and Telecommunications  
Association (PCTA)

PHCOLO

SGNIC

SGNOG

Singapore Exhibition & Convention Bureau

TWNIC, Taiwan Network Information Centre

University of Macau

ViewQwest

VNNIC, Vietnam Network Information Center



# Appendix: Events attended in 2022

The following is the list of events in which APNIC staff participated. A star (\*) indicates events where APNIC provided sponsorship

## JANUARY

	Economy	Engagement type
IPv6 Protocol, Architecture & Address Planning Tutorial	AP	Training
Cryptography Fundamentals Tutorial	AP	Training
9th Meeting of ITU TSAG (Telecommunication Standardization Advisory Group)	CH	Government; NOG
JANOG 49	JP	Membership Development; NOG
4th Interregional Meeting for Preparation of WTSA-20	CH	Government
Looking Lower: Programmable Data Planes (Part 1)	GO	Training
OSPF Operation Tutorial	AP	Training
4th Meeting of the APT Preparatory Group for WTDC-21 (APT WTDC21-4)	TH	Government
Cryptography Fundamentals Tutorial	AP	Training
MyFinTechWeek 2022	MY	Security
PTC'22	US	Technical

## FEBRUARY

	Economy	Engagement type
APNIC's Vulnerability Reporting Program	Online	Training
NANOG 84	US	NOG
Cryptography Fundamentals Tutorial	AP	Training
IRINN: IPv6 Protocol, Architecture & Address Planning Tutorial	IN	NIR Engagement; Training
IS-IS Operations Tutorial	AP	Training
DNS Fundamentals Tutorial	AP	Training
DNS-OARC 37	US	Technical
ISIF Asia 2021 Grantee Welcome Session	AP	Foundation Projects
OSPF Operation Tutorial	AP	Training
2nd Meeting of the APT Preparatory Group for PP-22 (APT PP22-2)	TH	Government
BGP Fundamentals & Attributes Tutorial	AP	Training
1st IGF 2022 Open Consultations and MAG Meeting	CH	Internet Governance
APNG Camp 15	AP	Development
M3AAWG 54th General Meeting	US	Security
IPv6 Protocol, Architecture & Address Planning Tutorial	AP	Training

ITU GSS-20 (Global Standards Symposium)	CH	Government
1st IGF 2022 Open Consultations and MAG Meeting	CH	Internet Governance
APNG Camp 15	AP	Development
M3AAWG 54th General Meeting	US	Security
IPv6 Protocol, Architecture & Address Planning Tutorial	AP	Training
BGP Fundamentals & Attributes Tutorial	AP	Training
ITU GSS-20 (Global Standards Symposium)	CH	Government

## MARCH

	Economy	Engagement type
ITU WTSA-20	CH	Government
BGP Fundamentals & Attributes Tutorial	AP	Training
IS-IS Operations Tutorial	AP	Training
APAN 53	BD	Development; Training
CNNIC: IPv6 Deployment and RPKI Workshop (Delivered in Mandarin)	CN	NIR Engagement; Training
20th ITCN Asia and Telecom Conference and Expo	PK	Member Outreach
PacSON Virtual Webinar	Oceania	CERT Engagement
Indonesia HoneyNet Project Workshop	ID	Security
IPv6 Deployment & Transition Techniques Workshop	PK	Training
APAC DNS Forum 2022	MY	Technical
PhNOG 2022	PH	Membership Development, Member Outreach; NOG; Training
DNS Fundamentals Tutorial	AP	Training
DWDM Fundamentals (Part-1)	AP	Training
Operational & Planning Aspects of DWDM (Part-2)	AP	Training
IETF 113	AT	Technical
MMIX AGM & Mini Peering Forum 2022	MM	Development
Assessing the Promise of Low Earth Orbit (LEO) Satellites in Accelerating Rural	PH	Development
KHNOG Training: Network & Information Security	KH	NOG; Training
Quarterly Threat Sharing & HoneyNet Community Session	Online	Security



<b>MARCH</b>	<b>Economy</b>	<b>Engagement type</b>
ICANN 73	PR	Coordination
20th ITCN Asia and Telecom Conference and Expo	PK	Membership Development
<b>APRIL</b>	<b>Economy</b>	<b>Engagement type</b>
BrisSec 2022	AU	Security
yIGF Myanmar 2022	MM	Internet Governance
DNSSEC Fundamentals Tutorial	AP	Training
Network Monitoring and Management (NMM) Fundamentals Tutorial	AP	Training
OECD - 6th Session of the Working Party on Security in the Digital Economy	FR	Government
ARIN 49	US	Coordination
Building your own switch with P4 (Part 2)	Online	Training
PCTA e-Tech Show 2022	PH	Membership Development; Member Outreach; Training
AusNOG 2021 (April '22)	AU	Membership Development; NOG
RPKI Deployathon	AU	Membership Development; Training
Meaningful Access to Advance Digital Societies - UNCTAD's E-Commerce Week	CH	Internet Governance
APT Extraordinary meeting for ITU WTDC-21 (WTDC-e)	TH	Government
Internet Routing Fundamentals Workshop - Malaysia	MY	Membership Development; Member Outreach; Training
MPLS Fundamentals Tutorial	AP	Training
BNEOx33 (52nd Session) - SecTalks Brisbane	AU	Security
Connections 2022 - A post-IETF 113 Forum	IN	Technical
IPv6 Transition: East Asia Perspective	Online	Training
<b>MAY</b>	<b>Economy</b>	<b>Engagement type</b>
INTERPOL Cybercrime Conference for LEAs and Judicial Authorities	TH	Security
NZNOG 2022	NZ	Membership Development; NOG; Training
CSP Threat Landscape 3	Online	Security
3rd ICANN APAC-TWNIC Engagement Forum (37th TWNIC OPM)	TW	Internet Governance; NIR Engagement
DNS Ecosystem Conference	CN	Technical
RPKI - Philippines Session	PH	Member Outreach; Training
INNOG 5	IN	NOG; Training
YIGF Nepal 2022	NP	Internet Governance
Corporate Device Management - Securing your employees devices	Online	Training
IRINN: IPv6 Transition Techniques	IN	NIR Engagement; Training
AusCERT 2022	AU	Security
Packet Analysis Tutorial	AP	Training
IRINN OPM	IN	NIR Engagement
RIPE 84	DE	Coordination
BKNIX Peering Forum 2022	TH	Development; Membership Development; Member Outreach; NOG; Training
IPv6 Deployment and Security Tutorial	AP	Training
Network and Information Security Workshop	SG	Training
3rd Meeting of the APT Preparatory Group for PP-22 (APT PP22-3)	JP	Government
PITA Business Forum & Exposition 2022	FJ	Member Outreach
CSP Content Creation/Update Workshop	AU	Security
IPv6 Deployment Workshop - Laos	LA	Training
Breach and Attack Simulation Tools	Online	Training
AIS'22 (AFRINIC 35)	MU	Coordination
What next for Afghanistan?	AF	Member Outreach
Packet Analysis Tutorial	AP	Training
Network Management and Monitoring Workshop	TH	Membership Development; Member Outreach; Training
ROA Creation Failed	BD	Technical Assistance
APEC TEL WG 64th meeting	TH	Government
<b>JUNE</b>	<b>Economy</b>	<b>Engagement type</b>
RPKI - Cambodia Session	KH	Member Outreach; Training
VNNIC Internet Conference 2022	VN	Internet Governance; NIR Engagement; Training
RightsCon 2022	US	Internet Governance



JUNE	Economy	Engagement type
APT Mongolia IPv6 Deployment Workshop	MN	Training
Security Assurance In the Internet of Things	Online	Training
RPKI/ROA Creation and Update - Philippines Session	PH	Membership Development; Member Outreach; Training
BGP Policy Control Tutorial	AP	Training
SNMP Fundamentals Tutorial	AP	Training
Reverse DNS Tutorial	AP	Training
Root Server Deployment and Operations	Online	Training
TWNIC – Network Security Workshop	TW	NIR Engagement; Training
ITU WTDC 2021 (World Telecommunication Development Conference)	RW	Government
Indonesia MCIT webinar on 5G, IoT and IPv6	ID	Technical; Development; Government
M3AAWG 55th General Meeting	GB	Security
CommunicAsia 2022	SG	Membership Development; Member Outreach
bdNOG 14	BD	Membership Development; Member Outreach; NOG; Training
FIRST Annual Conference 2022	IE	Security
Telekom Malaysia Cyber Security Seminar	MY	Security
Introduction to SDN/OpenFlow Tutorial	AP	Training
QUT - Internet Infrastructure Security Best Practices - Presentation	AU	Member Outreach
ICANN 74	NL	Coordination

JULY	Economy	Engagement type
RPKI/ROV Tutorial and ROA Session Mongolia	MN	Member Outreach; Training
Transport Layer Security (TLS) and Secure Socket Layer (SSL)	AP	Training
IDNOG 7	ID	Membership Development; Member Outreach; NIR Engagement; NOG; Training
CNNIC: IPv6 Deployment (Delivered in Mandarin)	CN	NIR Engagement; Training
Historical Resource Management and the benefits of RPKI	Online	Training

PhNOG 2022 Hybrid	PH	Member Development; Member Outreach; NOG; Training
IPv6 Transition Techniques	AP	Training
Transport Layer Security (TLS) and Secure Socket Layer (SSL)	AP	Training
UNODC Seminar on Ransomware	AP	Security
IETF 114	US	Technical
JANOG 50	JP	NOG
Defend your web apps for free with mod security	Online	Training
IGF 2022 2nd Open Consultations & MAG Meeting	CH	Internet Governance
DNS OARC 38	US	Technical
IPv6 Transition Techniques	AP	Training
RPKI/ROV Tutorial and ROA Session Cambodia	KH	Member Outreach; Training
WIC - First General Assembly	CN	Government
BSides Brisbane 2022	AU	Security
APT Myanmar Network Security Workshop	MM	Training
SANOG 38	NP	Membership Development; Member Outreach; NOG; Training

AUGUST	Economy	Engagement type
Inaugural Small Islands Developing States (SIDS) Internet Governance Forum (IGF)	Oceania	Internet Governance
Youth IGF Bangladesh 2022	BD	Internet Governance
IAA@AusNOG 2022	AU	Membership Development
Tonga Cyber Community Networking	TO	Security
Swiss German University (Indonesia) Digital Clinic Seminar	ID	Security
The 53rd AI3/SOI Asia Directors Meeting	ID	Foundation Projects
RPKI/ROV Tutorial and ROA Session Philippines	PH	Member Outreach; Training
How USD\$0 cloud infrastructure can support your business	Online	Training
Round-Robin Database (RRD) Fundamentals	AP	Training
RPKI/ROV Tutorial and ROA Session Cambodia	KH	Member Outreach; Training
So, you want to build a Data Centre	Online	Training





## AUGUST

	Economy	Engagement type
Community Networks - Frugal Technologies and Community of Practice	Online	Internet Governance
Global IPv6 Summit 2022	CN	Technical
PacNOG 30	FJ	Membership Development; Member Outreach; NOG; Training
BGP Multihoming	AP	Training
Memory Forensics Tutorial for Tonga Security Community	TO	Security
ITCN Expo 2022 Karachi	PK	Membership Development; Member Outreach
15th APT Policy and Regulation Forum for Pacific (PRFP-15)	VU	Government
Cyber Safety Pasifika - Tier 2 Course	FJ	Security
APIGA 2022	KR	Internet Governance
Fourth Meeting of the APT Preparatory Group for PP-22 (APT PP22-4)	TH	Government
CompTIA Partner Summit 2022	US	Foundation Projects
Future of data governance in LAC / IDRC & D4D.net	AP	Internet Governance
RPKI/ROV Tutorial and ROA Session Mongolia	MN	Member Outreach; Training
APAN 54	CN	Development; Training
APNIC: Macau - Intro to Internet Routing Tutorial	MO	Training
APNIC: Macau - Information Security Tutorial	MO	Training
SGNOG 9	SG	Membership Development; Member Outreach; NOG

## SEPTEMBER

	Economy	Engagement type
APNIC 54	SG	APNIC; Membership Development; Member Outreach; Training
CrikeyCon 8	AU	Security
MyNOG 9	MY	Membership Development; Member Outreach; NOG
RPKI/ROV Tutorial and ROA Session Mongolia	MN	Member Outreach; Training
IXP Setup Workshop - Maldives	MV	Training
Global Dialogue on Digitalization - MN (Virtual)	MN	Security
China Internet Infrastructure Resource Conference (CNIRC) 2022	CN	Government; NIR Engagement

AusNOG 2022	AU	Membership Development; NOG
RPKI/ROV Tutorial and ROA Session Philippines	PH	Member Outreach; Training
PacSON 2022	FJ	CERT Engagement
Packets don't lie - Threat Hunting with Zeek	Online	Training
RPKI/ROV Tutorial and ROA Session Cambodia	KH	Member Outreach; Training
inSIG 2022	IN	Internet Governance
GFCE Triple-I Workshop and India Youth IGF 2022	IN	Internet Governance
Asia Peering Forum 2022	SG	Technical
ITU PP-22 (Plenipotentiary Conference 2022)	RO	Government
ICANN 75 (24th AGM)	MY	Coordination
Philanthropy Australia National Conference 2022	AU	Foundation Projects
APrIGF 2022 and APSIG 2022	SG	Internet Governance
SD-WAN - An overview	Online	Training
RIPE 85	RS	Coordination

## OCTOBER

	Economy	Engagement type
mnNOG 4	MN	NOG; Training
NZITF Conference 2022	NZ	Security
MN Security Community Engagement	MN	CERT Engagement; Security
ISLET - Connect: Demonstration and Stakeholder Engagement Event	AP	Foundation Projects
RPKI/ROV Tutorial and ROA Session Nepal	NP	Member Outreach; Training
RPKI/ROV Tutorial and ROA Session Mongolia	MN	Member Outreach; Training
Indonesia Academic CSIRT Conference	ID	CERT Engagement
OARC 39 & 47th CENTR Technical Workshop	RS	Technical
RPKI/ROV Tutorial and ROA Session Fiji	FJ	Member Outreach; Training
VNIX-NOG 2022	VN	Member Outreach; NOG; Training
Internet Routing Workshop - Timor-Leste	TL	Training
RPKI/ROV Tutorial and ROA Session Philippines	PH	Member Outreach; Training
LACNIC 38/LACNOG 2022	BO	Coordination; NOG



## OCTOBER

	Economy	Engagement type
btNOG 9	BT	Membership Development; Member Outreach; NOG; Training
NANOG 86	US	NOG
Open Lab - Routing	AP	Training
ISPAB IPv6 Workshop	BD	Training
ARIN 50	US	Coordination
Open Lab - Linux Basics	AP	Training
PCTA USAID Connectivity and Cybersecurity Conference	PH	Training
Cybergreen Annual Meeting 2022	AU	Foundation Projects
Cyber Security Week Bangladesh	BD	Security
PRIF Week (Pacific Regional Infrastructure Fund)	AU	Foundation Projects
NetThing 2022	AU	Internet Governance
HKNOG 11.0	HK	NOG
FIRST Virtual Asia Pacific Regional Symposium	AP	Security
ITU PITA Forum on Smart islands	FJ	Government
RPKI/ROV Tutorial and ROA Session Cambodia	KH	Member Outreach; Training

## NOVEMBER

	Economy	Engagement type
Open Lab - IPv6	AP	Training
IANA Community Day	BE	Technical
DWDM Tutorial	AP	Training
BDIGF 2022	BD	Internet Governance
Open Lab - Linux Basics	AP	Training
FIRST Cyber Threat Intelligence Symposium	DE	Security
Advanced Routing with Multihoming Workshop Malaysia	MY	Development; Member Outreach; Training
Open Lab - Routing	AP	Training
How to set up Router/OS 7 and ROV	Online	Training
Switch! Viet Nam Welcome Event	VN	Foundation Projects
A retrospective look at IPv6 deployment in the region	Online	Training
RPKI/ROV Tutorial and ROA Session Philippines	PH	Member Outreach; Training
Peering Asia 4.0	TH	Development
KHNOG 4	KH	NOG

Pacific Telecommunications Security Expert Forum (PTSEF)	AU	Security
The Australasian AID Conference (AAC) 2022	AU	Foundation Projects
ITCS 2022	IN	Membership Development; Member Outreach
Internet Governance Forum 2022	ET	Internet Governance
RPKI/ROV Tutorial and ROA Session Cambodia	KH	Member Outreach; Training
Samoa IT Association (SITA) Tech Expo	WS	Security
UMS Cybersecurity Awareness Seminar 2022	MY	Security
LKNOG 6	LK	Membership Development; Member Outreach; NOG; Training
Open Lab - DNS	AP	Training
ICANN DNS Symposium (IDS 2022)	BE	Technical
Internet Routing Workshop Cambodia	KH	Training
KRCERT/CC (KISA) APISC Annual CERT Workshop 2022 (Virtual)	KR	CERT Engagement
Switch! Thailand Welcome Event	TH	Foundation Projects
RPKI/ROV Tutorial and ROA Session Pacific	Oceania	Member Outreach; Training
IPv6 Awareness Tutorial - Mongolia	MN	Training
FNU Cyber Security Awareness Symposium	FJ	Security
IDNIC AMM 2022 & Security Workshop	ID	Member Outreach; Membership Development; NIR Engagement; Security
54th A13-SOI Asia Joint Meeting	PH	Foundation Projects
IETF 115	GB	Technical
Switch! Philippines Welcome Event	PH	Foundation Projects

## DECEMBER

	Economy	Engagement type
CNNIC: IPv6 and RPKI Workshop (Delivered in Mandarin)	CN	NIR Engagement; Training
RPKI/ROV Tutorial and ROA Session	Oceania	Training
BtCIRT Cybersecurity Bootcamp	BT	CERT Engagement
Switch! Timor Leste Welcome Event	TL	Foundation Projects
Switch! Cambodia Welcome Event	KH	Foundation Projects
Open Lab - DNS	AP	Training
RPKI Deployment Status: 2022 in Review	Online	Training



DECEMBER	Economy	Engagement type
UN-OEWG ICTs 2021-2025 Informal Meeting (Dec 2022)	US	Government
Switch! Laos Welcome Event	LA	Foundation Projects
LANOG Mini-Event	LA	NOG
CNCERT International Partnership Conference 2022	CN	CERT Engagement
Vietnam Internet Day 2022	VN	Development
ICANN Root Server System Governance Working Group	US	Technical
TWNIC 38th OPM	TW	Membership Development; Member Outreach. NIR Engagement; NOG; Training
KDDI Foundation- Network Security and Incident Handling	LA	Training
bdNOG 15	BD	NOG; Training
Open Lab - IPv6	AP	Training
RPKI/ROV Tutorial and ROA Session Nepal	NP	Training

### Helpdesk

Monday–Friday 09:00–21:00 (UTC +10)

### Postal address

PO Box 3646  
South Brisbane, QLD 4101  
Australia

### Email

[helpdesk@apnic.net](mailto:helpdesk@apnic.net)

### Phone

+61 7 3858 3188

### Chat

[apnic.net/helpdesk](https://apnic.net/helpdesk)

**[www.apnic.net](https://www.apnic.net)**

ABN 42 081 528 010