

AP* Retreat

Presented by Sylvia Cadena, Head of Programs and Partnerships

11 September 2023 – Kyoto, Japan



Asia Pacific Network Information Center - APNIC

- A neutral, independent, not-for-profit, membership-based organization established in 1993
- Managing Internet number resources IPv4, IPv6 and ASNs
- Serving APAC region



APNIC performs these activities as part of its commitment to a **global, open, stable** and **secure** Internet that serves the entire Asia Pacific region

- APNIC helps [build essential technical skills](#) across the region
- Supports Internet infrastructure development
- [Produces insightful research](#)
- Active participant in the multistakeholder model of Internet cooperation and governance.



Foundation team



Back row: Duncan, Omar, Indika
Front row: Dave, Marcos, Sylvia, Cathlene, Elisha, Ann and David
Swati and Helen (not in the photo)

The APNIC Foundation



VISION

To have a global, open, stable and secure Internet that is affordable and accessible to the entire Asia Pacific community

MISSION

To increase investment in Internet development in the Asia Pacific region, through education and training, human capacity building, community development, research, and related projects and activities

INITIATIVES

-  **3** Foundation-led projects
-  **22** ISIF Asia grants
-  **2** ISIF Asia awards
-  **7** Foundation Community Assistance



2022 Annual Report

SCAN ME





How we work

Committed to achieve
Meaningful Impact
through these programs

To support these activities

To strengthen these communities

To achieve these goals



Infrastructure



Inclusion



Knowledge

Technical Training
and Assistance

Community Development

Grants and Awards

Internet Infrastructure

Research
and collaboration

Network
Engineers

Security
Professionals

Internet
Governance
Specialists

GLOBAL

OPEN

AFFORDABLE

ACCESSIBLE

STABLE

SECURE





Foundation Programs



INFRASTRUCTURE

Efforts to increase Internet speed, reduce maintenance and operational costs, improve reliability and/or security from a technical and operational perspective.

Network deployment and operations

Network monitoring and management

Security and privacy





Foundation Programs



INCLUSION

Efforts to ensure that everyone has meaningful and efficient access to the Internet, online applications and services, from a technical and operational perspective.

- Availability of connectivity
- Internet access affordability
- Accessibility
- Diversity





Foundation Programs



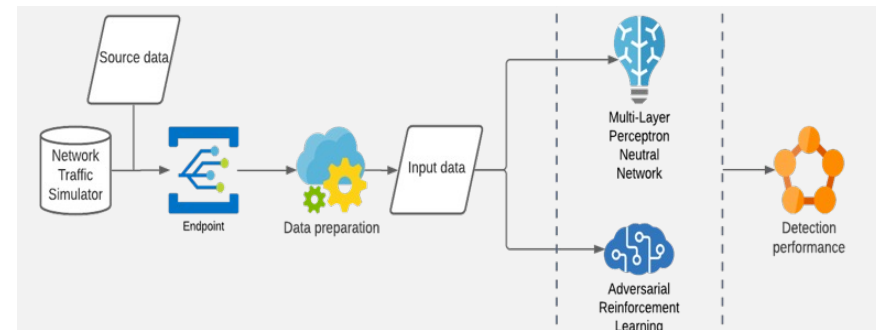
KNOWLEDGE

Efforts to develop technical capacity and/or research around Internet network operations, from a technical and operational perspective.

Professional development

New information and training resources

Translation of knowledge resource into Asia Pacific (APAC) languages





Impact and projects updates

January to June 2022



Training delivery and community trainers



USD 1,435,168 forecast



On track

- 27 face-to-face and 32 online/hybrid instructor-led tutorials/workshops, including 15 instructor-led RPKI/ROV tutorials/workshops and 30 instructor-led IPv6 deployment tutorials/workshops (**59 in total**, below target of 60)
- **Average survey rating of 4.38** out of 5, over 4/5 target
- **20 technical community events**, surpassing the initial target of 15
- On track with goal to reach 90% ROA coverage in one additional economy per sub-region (Mongolia; PNG; Maldives and Bhutan; and Laos)
- 7 volunteer Community Trainers (CTs) and 3 Retained Community Trainers (RCTs) recruited, surpassing target of 5
- **Trainings led by CTs rose 39%** surpassing 10% target, with 145 participants trained in face-to-face sessions, and 336 participants



APNIC academy

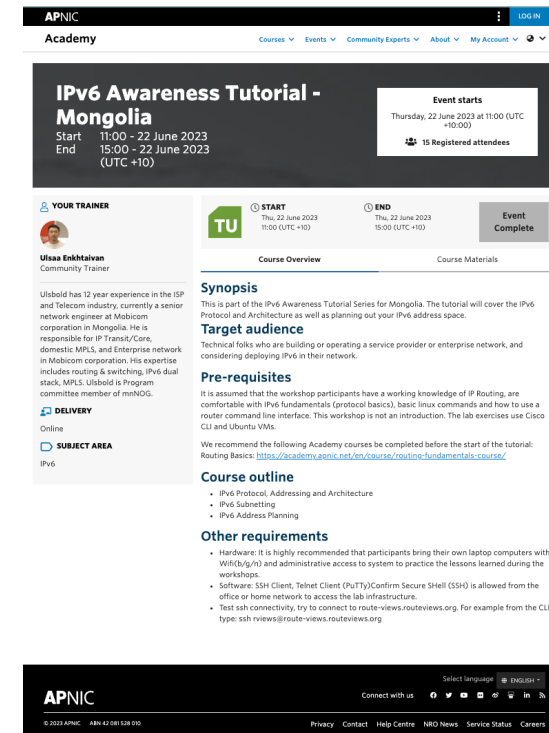


USD 1,027,575 forecast



On track

- Platform maintained **99.5% availability** meeting target
- **Technical Assistance** requests from members responded to within **seven days**
- **13,297 hours** used of self-paced online courses and virtual labs, surpassing target of 5,000 hours
- Number of registered users on the Academy platform reached **30,115 users**, surpassing the annual goal of 30,000





Curriculum development for non-technical audiences



USD 56.015 forecast

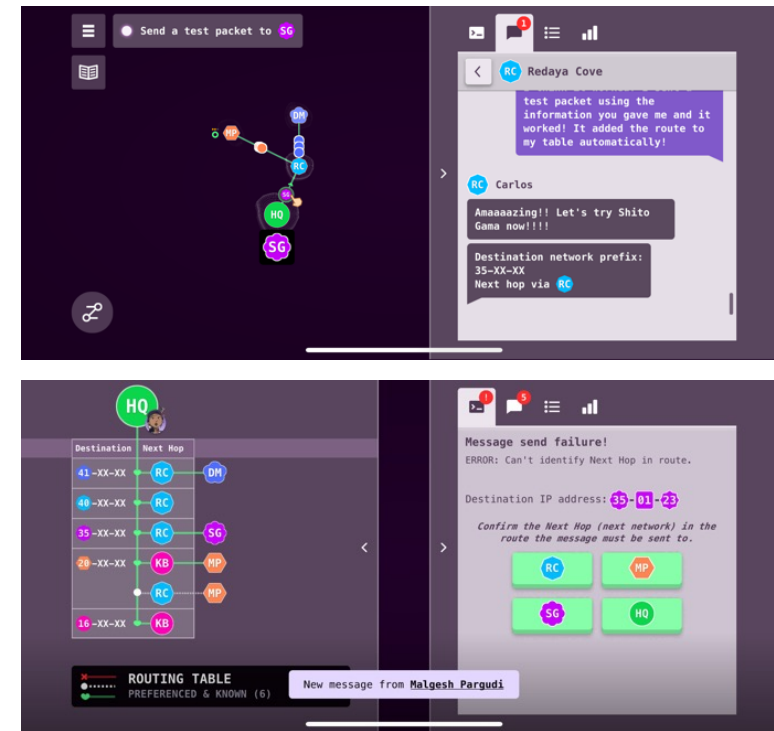


Phase 1 completed

Interactive narrative puzzle designed to help non-technical audiences to understand Internet network addressing

Phase 1 **completed** with Minimum Viable Product:

- Alpha and Beta versions rigorous testing (at least 50 tests executed to guarantee reliability and performance)
- All technical defects identified were addressed ensuring a smooth and functional product
- Technical accuracy validated and approved by APNIC Subject Matter Experts (SMEs) to meet specific requirements of target audience
- **No funding approved for phase 2 yet**





Research and Internet measurement

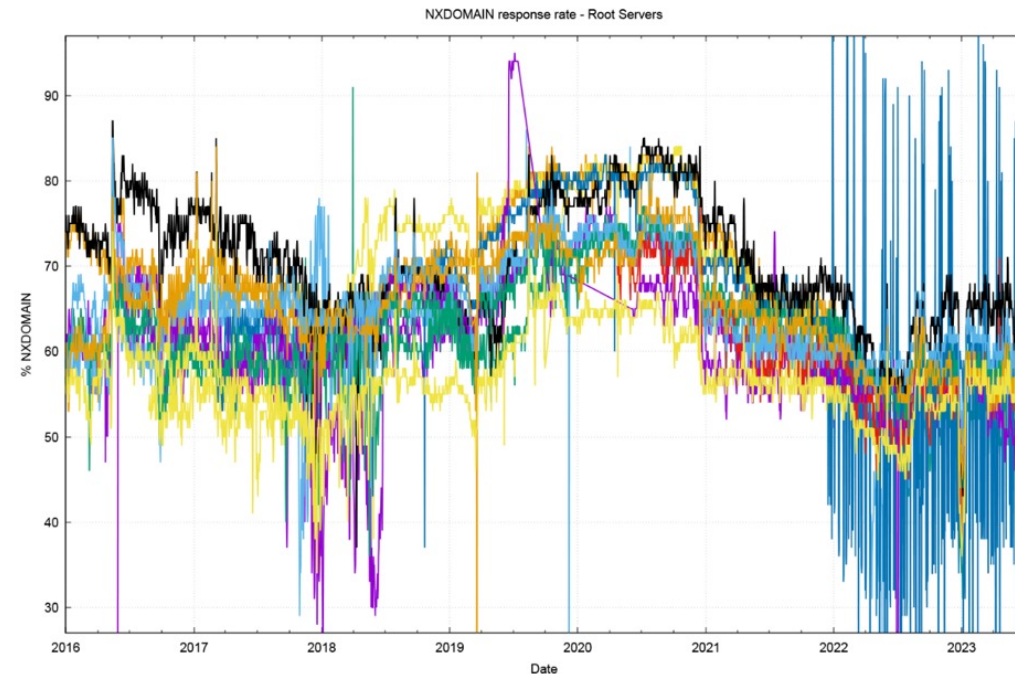


USD 202,898 forecast



On track

- 4-star rating from 17 blogs in the first 6 months
- 15 research presentations developed on topics including: DNS; DoH and DoT (DNS over Transport Layer Security TLS vs. DNS over HTTP over TLS); IPv6; QUIC general-purpose Transport Layer Network protocol; DNSSEC; and Border Gateway Protocol





M-root deployment



USD 550,969 forecast



Deployment on track

Two M-Root instances were deployed:

- Jakarta, Indonesia (IIX-JK/OpenIXP)
- Kaohsiung, TW (TWIX)

Three new sites with local hosts have been identified including:

- Cambodia (CNX)
- New Zealand (REANNZ)
- Brazil (NIC.br)

In progress, with MOUs signed:

- Cambodia (CNX)
- Hong Kong (HKIX)
- Pakistan (PKIX)
- India/Mumbai (NIXI)
- India/Kolkata (IIFON)
- Nepal (NPIX)
- Mongolia (MISPA)
- Philippines (PhOpenIX)
- Bangladesh (BDIX)
- Myanmar (MMIX)



Cybersecurity: honeynet and threat sharing



USD 53,900 forecast



On track

- Honeypot sensors deployed increased by 60% to 160
- 23 community partners (increase by 30)
- Facilitated quarterly threat sharing sessions
- Data feeds consistently provided to DASH
- Research findings regularly shared through events and the APNIC Blog





Foundation community assistance



USD 303,107 forecast



On track

- Seven funding requests processed (tracking 14 in total) with six reports reviewed and approved

| Funding recipient | Main activity supported | Amount |
|--|--|---------|
| Ministry of Communication and Aviation | Solomon Islands CERT development | 120,000 |
| EngageMedia | Fellowships and logistics support - APAC Digital Rights Festival | 20,000 |
| APIA | Fellowships support - SANOG | 10,000 |
| IGF Secretariat | IGF 2023 - APAC Remote Hubs and Global South Fellowships | 30,000 |
| Dot Asia | APrIGF Fellowships and logistics support | 20,000 |
| FIRST | Regional Symposium for the Pacific | 20,000 |
| KISA | APIGA Fellowship and Conference | 10,000 |





Technical training and mentoring support for Internet professionals in Afghanistan



USD 205,636 forecast



On track

- 32 Afghan participants
- 206 courses and learning activities approved
- 18% reported as completed (44 training and professional certifications achieved)
- 88% of the participants reported progress on monthly basis
- Dashboard completed to visualize plans progress



IPv6 Protocol, Architecture & Address Planning Tutorial

Event starts
Wednesday, 25 January 2023 at 14:00
(UTC +10:00)
Time Remaining

| | | | |
|------|-------|---------|---------|
| 36 | 21 | 24 | 31 |
| Days | Hours | Minutes | Seconds |

Start 14:00 - 25 January 2023
End 18:00 - 25 January 2023
(UTC +10)

YOUR TRAINER

Dave Phelan
Senior Network Analyst / Technical

TU **START** Wed, 25 January 2023 14:00 (UTC +10) **END** Wed, 25 January 2023 18:00 (UTC +10) [Register](#)

Switch Timezone: ON OFF Showing browser local time (Australia/Brisbane)



Switch! gender and diversity



USD 1,194,306 forecast



On track

- 176 participants from KH, LA, TL, TH, PH, VN: 162 women, 14 gender diverse, including 16 from TL that joined this period
- 49% completion with average 11 courses
- 30% graduated, 3 months ahead of schedule
- 24% participants reported active community engagement (138 events)
- 13% research projects supported already published
- 88% team members completed GESI training
- 80% reported high satisfaction on the engagement survey





Trust discretionary fund



USD 328,262 forecast



On track

- Two activities were funded efficiently, with a six-week execution time
- Confluence was consistently updated as needed
- T&Cs with all 2022 recipients implementing their 12 months of support verified, with logo was prominently displayed as agreed
- Most funding will be acquitted for the renewal of funded activities in the second half of the year, with 10 activities for processing

| Funding recipient | Main activity supported | Amount |
|-------------------|---|--------|
| Internet Society | Internet Protocol Journal | 25,000 |
| Internet Society | Mutually Agreed Norms for Routing (MANRS) - Ambassador and Fellowship Program | 12,000 |



School on Internet Asia (SOI Asia)



USD 2,779,889 forecast



On track

- Signing of Memorandum of Understanding (MoU) between Keio University and six partners formalized the relationship among universities and allows smoother collaboration and cooperation for project activities
- EBA program commenced preparing and implementing fieldwork activities hosted by different partner universities. It also welcomed new partners collaborating on the design of new fieldwork and learning opportunities
- APIE program second run of online course "Understanding the Internet" attracted **190+ learners from over 100 countries**
- In February, the APIE Camp in Japan also brought students, teaching assistants, mentors, lecturers, and specialists together in onsite workshops
- Insignia system has seen growth in number of participating universities and available courses. Discussions with experts are underway to explore the transition to Open-badge 3.0 to ensure alignment with technical standards



ISIF Asia at a glance



USD 2,868,328 forecast



On track

- New Grants Management Lead and Technical Reports Reviewer hired
- 23 Selection Committee members onboarded to serve across five committees
- 2023 application and selection completed with final decision expected in July. 135 applications (12% increase) across five funding opportunities: Inclusion (52), Infrastructure (27), IPv6 Deployment (5), Knowledge (27) and Environment (29)
- **Tracking 44 projects (2021 and 2022 funding cycles): 39 remain in progress and 5 closed. 24 projects to be announced on 12 October, around 7M USD**
- Site visit to three projects conducted
- Three events: Connectivity session at AVPN, APriGF session on connectivity and ISIF Asia Awards for IXPs at the global IGF are in progress
- New website including profiles for all projects with publication of reports to resume shortly



Internet connection to 4 villages in San Isidro, Davao – Site visit



WiFi Custodian



Davao Medical School Foundation team



ISLET Connect, Cebu – Site visit



Long distance link deployment, sustainability model and CVISNET Foundation team



Community networks models, Ifugao – Site visit



Coffee roaster machines to be connected and farmers meeting with Philippines Coffee Alliance team and ISEA



ISIF Asia projects completed

5 technical and financial report approved and ready for publication, all funds disbursed



Equal access to information society



USD 165,000

Myanmar Book Aid & Preservation Foundation



Myanmar



Completed

- 40 communities (50% above target, 60% women-led) connected to library network (up from 210 to 250 centres) with over 125,012 visitors (80% increase from 2021)
- 4,500+ people (10% above target) received training on mobile information literacy over 12 months with surveys indicating high levels of satisfaction
- 200 girls selected to Tech Age Girl (TAG) received 9-month leadership course with 40 community support projects successfully conducted
- In collaboration with Myanmar Business Executive (MBE), 43 SMEs (65% are women led and 70% are from rural areas) received 6 months training and mentorship (Marketing, business, human resource and financial management)
- In-kind donations of digital devices valued at USD 100,000 by Ooredoo

Lessons learned

- As the military took over on 1 February 2021, the project faced much disruption, but partnerships with IREX and Ooredoo were key to maintain operations
- Non-formal education in neutral grounds such as MBAPF community centres is key for community development, peace and hope cover diverse people and needs



Intelligent honeynet threat sharing platform



USD 150,000

Swiss German University



Indonesia



Completed

ASEAN collaboration through partnerships with [Indonesia Honeynet Project](#) and the Cyber Security Community – Information Sharing Analysis Center:

- [Public dashboard of CSC-ISAC](#) released and accessible includes latest visualization of different threat maps
- Two honeypot types (honeytrap and RDPy) provide wider range of detecting security threats especially in Ethereum cryptocurrency and remote desktop services
- Upgrades improved data collection, synchronization, analysis, storage, and monitoring services performance
- Enriched data ready to be shared as threat intelligence information using standardized threat-sharing protocols such as TAXII and MISP
- Research papers presented and published at different international conferences
- Training opportunities provided to project team (through the APNIC Foundation agreement with CompTIA as Academic Partner)

Lessons learned

- Deploying honeypots to track security attacks provides important and insightful information on the attacker's intention and activities
- Newly introduced and existing services will pose new and unknown risks due to system vulnerabilities and other related system threats
- Fostering collaboration between research institutions increase their research capacity to understand security threats as well as to create awareness



SDN-based Internet eXchange playground



USD 30,000
University of Malaya



Malaysia



Completed

Free, useful, and convenient environment for collaborators to verify and evaluate ideas and practices in a scale-up, real environment with internet connectivity:

- Introduced SDN, IPv6, BGP, and ROV innovations, building a virtual internet exchange playground, simulating IXP operation, and re-allocating IPv6 resources
- Kubernetes nodes scattered in different countries allow players a genuine experience in setting up cross-border topologies through VXLAN and running SDN controller in a WAN environment
- In collaboration with TEIN and RENS, the project made strides to popularize study of SDN/BGP techniques as well as to learn to evaluate by using network analytics tools
- Four online training, tutorials and seminars were conducted using the playground on SDN, FRR(BGP), RPKI/ROV, Advanced SDN
- Over 100 participants (close to 50% women) from Taiwan, Sri Lanka, Cambodia, Myanmar, Indonesia, Thailand, Bhutan, Laos and Malaysia

Lessons learned

Students graduate with limited operational experience due to the high cost of maintaining labs at universities. To gain practical operational experience and increase confidence in the use of technical skills, experimenting in a controlled environment with scenarios and equipment as close to the real world as possible is critical



IPv6 knowledge transfer



USD 30,000

India Internet Engineering Society



India

- Implementation of a successful webinar series aimed at empowering enterprises and universities with essential and advanced IPv6 skills, supplemented with lab demonstrations showing live operation, commands, and logs as well as packet traces
- Provided hands-on experience to 563 technicians from outsourcing companies, "brick-and-mortar" enterprises, small independent software companies and universities in 60 countries (11 from APAC region)
- Presentations and recordings on YouTube reached 1300+ views
- MoUs signed with National Institute of Technology Karnataka, Surathkal (NITK Surathkal) in India to assist their team in the deployment of IPv6, which resulted in NITK Surathkal receiving an IPv6 deployment grant
- Two new Internet Drafts and several presentations at APNIC conferences



Completed

Lesson learned

We can't reduce our commitment to develop operational capacity to deploy IPv6. The community is caught in an unfortunate cycle where misinformation about the complexity of the IPv6 protocol and unreasonable fears about security and manageability combined with the perceived lack of urgent business needs, prevents adoption of IPv6



Internet connection to 4 villages in San Isidro, Davao del Norte



USD 30,000

Davao Medical School Inc.



The Philippines



Completed

- Extended coverage to eight locations (two hotspots in four Barangays) affected by lack of income due to strict enforcement of health protocols during pandemic
- Agreement with ISP covered installation and maintenance of solar powered wireless system to relay signal; training provision to 24 “WiFi Custodians” to operate the system, and voucher system for resell access at affordable prices
- System managed by four community organizations implemented income generating services (printing and scanning) with over USD3,000 in revenue generated over 10 months distributed to different local funds (health community development, patronage and reserve) according to community policies
- Working area with solar-powered lighting encouraged students working to complete online classes and research activities to use the system
- More than 1000 people used the system over 10 months (including 690 school children)

Lessons learned

- Shared revenue models led by community organizations with ISPs to extend connectivity can offer clear benefit around faster deployment, convenient arrangements for maintenance/repairs and training need
- Complementary services like solar powered lighting and a secure meeting area encourage use



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Questions, comments and
feedback are always
welcome!