

Securing The Indonesia Routing Table

An Update From IDNIC and IIX

Syarif Lumintarjo, IDNIC Chairman

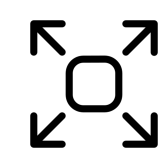
IDNIC (Internet Registry)



Role: National Internet Registry (NIR) Under APNIC



Function: Resource Allocation (IPv4, IPv6, ASN)



Scale:

5100+ Members
(ISP/Corporate/Gov/Edu)

52 Million /48 IPv6 Delegated

29.203 /24 IPv4 Delegated

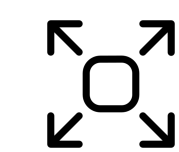
IIX (Internet Exchange)



Role: Indonesia Internet Exchange (IIX) Managed by APJII



Function: Resource Allocation (IPv4, IPv6, ASN)



Scale:

791 Connected ASN

19 Tbps Peak Traffic

One of **Largest IXP In Indonesia**

Our Roadmap Before Dropping RPKI Invalid In Indonesia Internet Exchange (IIX)

IDNIC RPKI Roadmap

2019

Phase 1

Deployed production ready
CA & RPKI System

2020

Phase 2

Allow IDNIC Member to create ROA from
myIDNIC

2020

Phase 3

IDNIC ROA dashboard & monitoring

2021

Phase 4

IDNIC RPKI Awareness Campaign

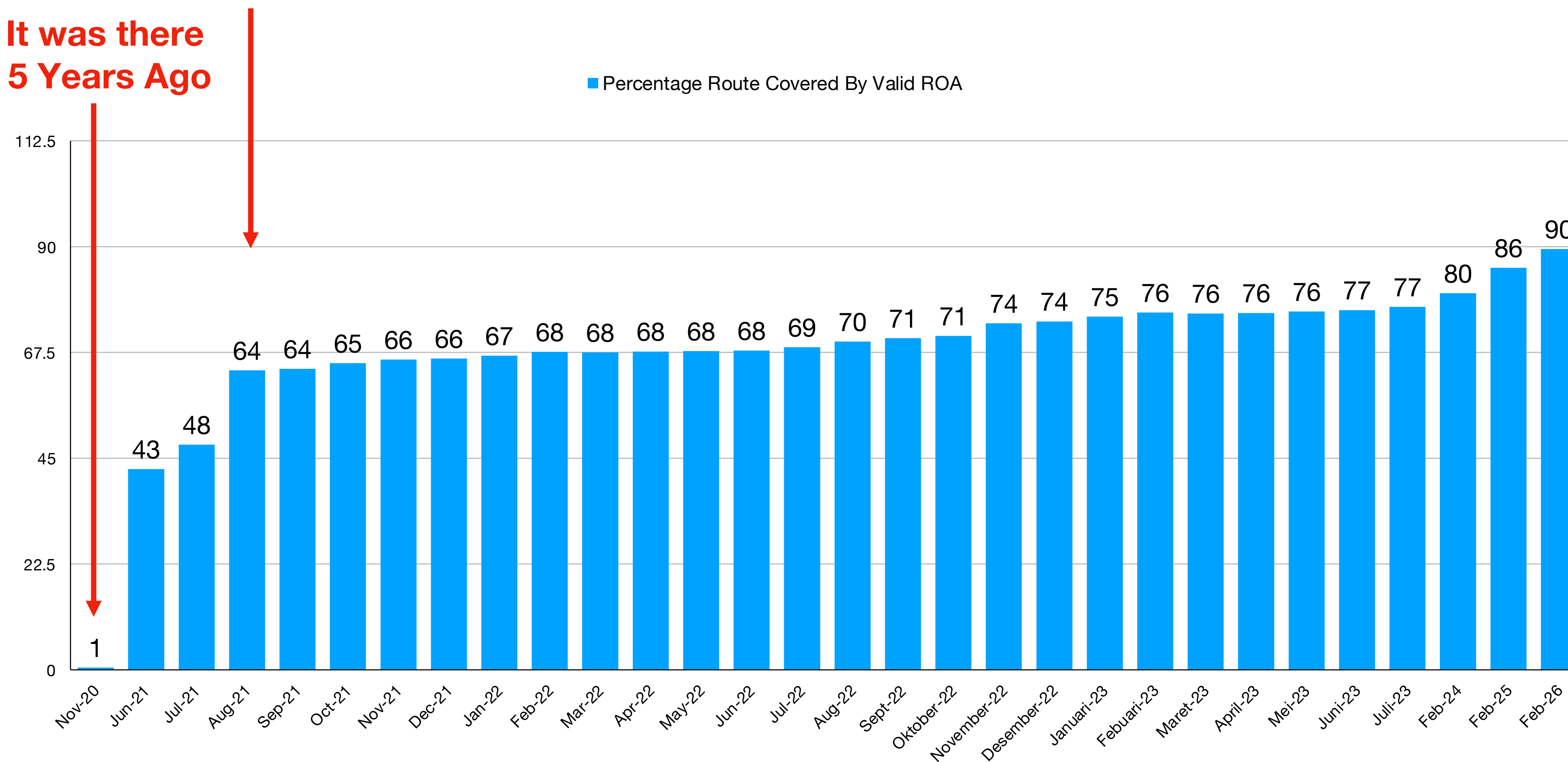
2025


Phase 5


Road To 100% ROA Coverage

IDNIC RPKI Campaign


It was there
5 Years Ago





 **indonesia network information centre**


 **ROA Request**


hostmaster@idnic.net

 Home

 Resources

 Tools

 Admin

 Support

CREATE ROA

Prefix :


ex. 103.119.204.0/23

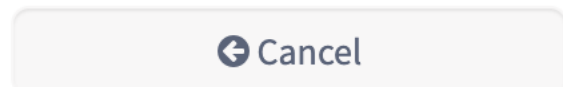
AS Number :

ex. 4622

Maximum Length :

ex. 24

 **+ Create ROA**

 **↩ Cancel**

IDNIC RPKI Facility: Members are able to certify their resources via myIDNIC Portal

Median of Rsync

125 RPS

Median of RRDP

431 RPS

RRDP repo-rpki.idnic.net
RSYNC repo-rpki.idnic.net

Network Peak Traffic

515 Mbps

Total VRPs

13.680

Total Publication Point

2.268

**Running Hosted RPKI Publication
is a big responsibility.**

IDNIC RPKI Is Backed By:



IDNIC RPKI Awareness Campaign

Workshop

90%
Conversion Rate

235 ROA Created

Social Media

55%
Conversion Rate

42 ROA Created

Direct Approach

70%
Conversion Rate

3641 ROA Created



IDNIC RPKI Awareness Campaign



IDNIC RPKI

Your BGP Advertisement Are Not Protected

To: david

Dear Network Operator,

Some of your BGP Advertisements are not protected with RPKI

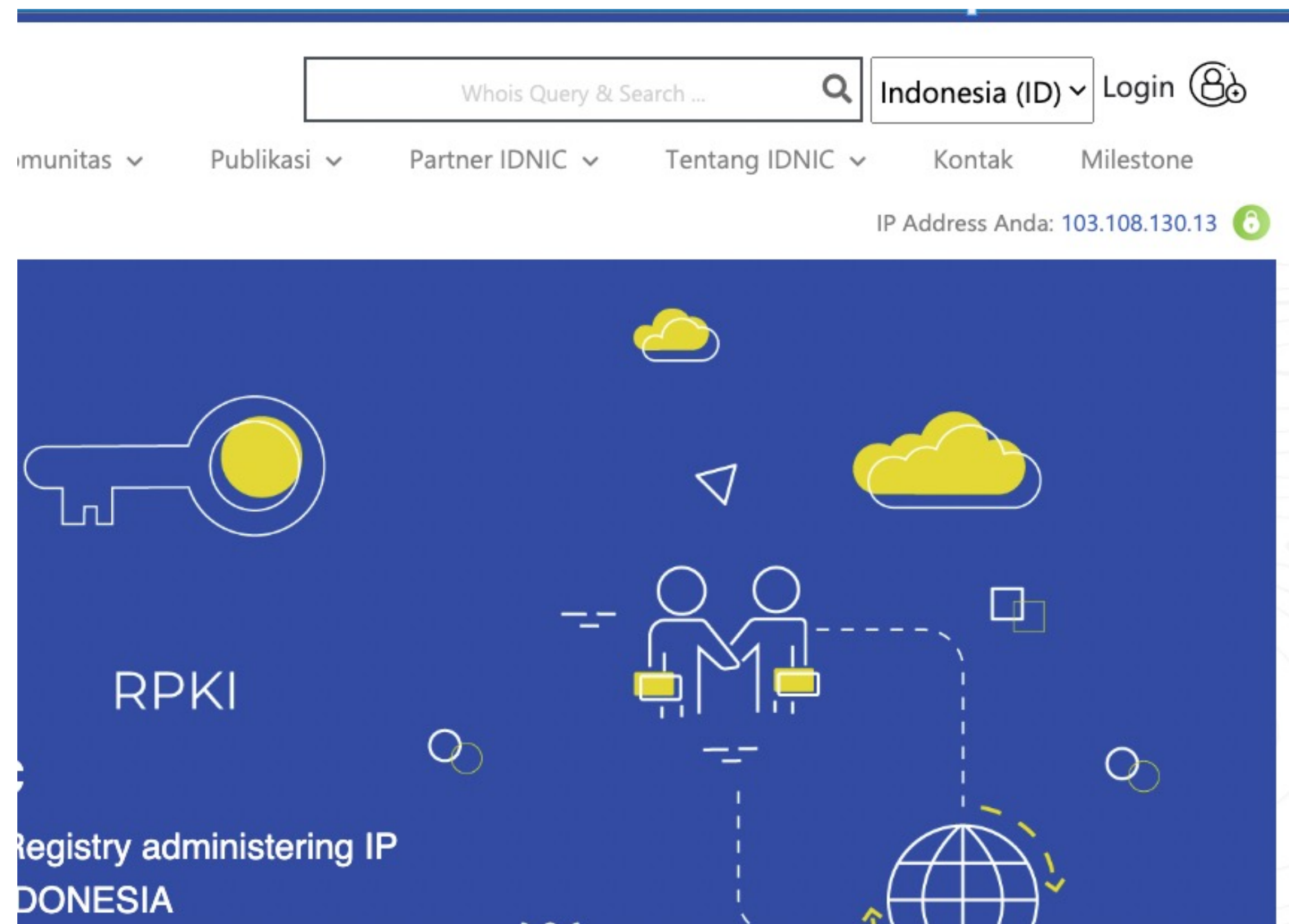
203.119.13.0/24 Origin AS63515
116.193.188.0/24 Origin AS63515
116.193.189.0/24 Origin AS63515

Please [create ROA now](#)

[Learn more about RPKI](#)

Direct email to IDNIC member, to
warn that their BGP Advertisement
isn't secure

IDNIC RPKI Awareness Campaign



RPKI Badge

Badge on IDNIC Website, showing whether client IP has ROA or not

IDNIC RPKI Awareness Campaign

f Digital Transformation







Kelola IP

- Layanan IDNIC
- Transfer IP
- Panduan IP & ASN
- Panduan Whois
- IRM
- Reverse DNS


Event

- Daftar Event
- Agenda Event
- Sponsorship


Temukan kami di:

Official Infrastructure Partner



Official Technology Partner



IDNIC website © 2022

Embeddable RPKI Badge

Embeddable RPKI Badge, designed for member website. I will reflect website owner RPKI ROA status.



IDNIC RPKI Awareness Campaign

 **ROV Check**

 **Drop Invalid Test**

Prefix or IP Address

203.119.13.0/24

Origin ASN (optional)

63515

Validate

Validation results for **203.119.13.0/24 - 63515**

Invalid

Fix it now



LOGIN WITH MYIDNIC



Action button to directly fix Invalid / Unknown ROA

IDNIC RPKI Awareness Campaign

IDNIC RPKI Drop Invalid Test



RPKI ROV

Drop BGP Invalid Test

Check if you have filtered Invalid BGP route with RPKI ROV



RPKI VALID

Unfortunately, your ISP **IDNIC AS63515** Dropped BGP RPKI Invalid



EMAIL



FACEBOOK



ROV data last updated 2023-09-09 04:56:58 (5 minutes ago)

The Enforcement..

<https://iix.net.id/>

15 Peering Point Across Indonesia





IIX (Indonesia Internet Exchange)
Is dropping RPKI Invalid!

Since 2023

791
Peer

17.762
IPv4 Prefix

2.400
IPv6 Prefix

88%
Peer Prefix Roa Coverage

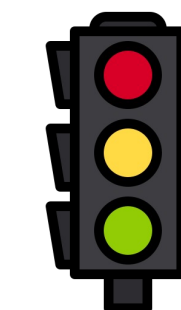
The Motivation

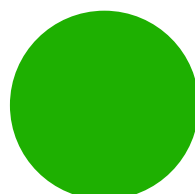
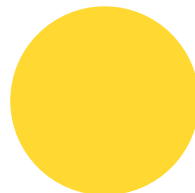
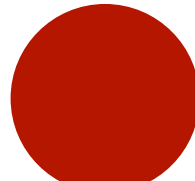
The "Amplifier" Risk IXPs connect everyone. A single misconfiguration (fat-finger) instantly pollutes hundreds of routing tables. We must stop this at the gate.

The "Clean Pipe" Promise Members peer at IIX to exchange traffic, not to debug routing errors. It is our duty to sanitize the routing table.

Maturity = Action At 89% adoption, an "Invalid" signal is reliable. It's no longer "missing data" —it's a confirmed error or attack.

Route Server Logic



-  **State : Valid**
Action : Accept / Propagate
-  **State : Unknown**
Action : Accept (For Now)
-  **State : Invalid**
Action : Drop

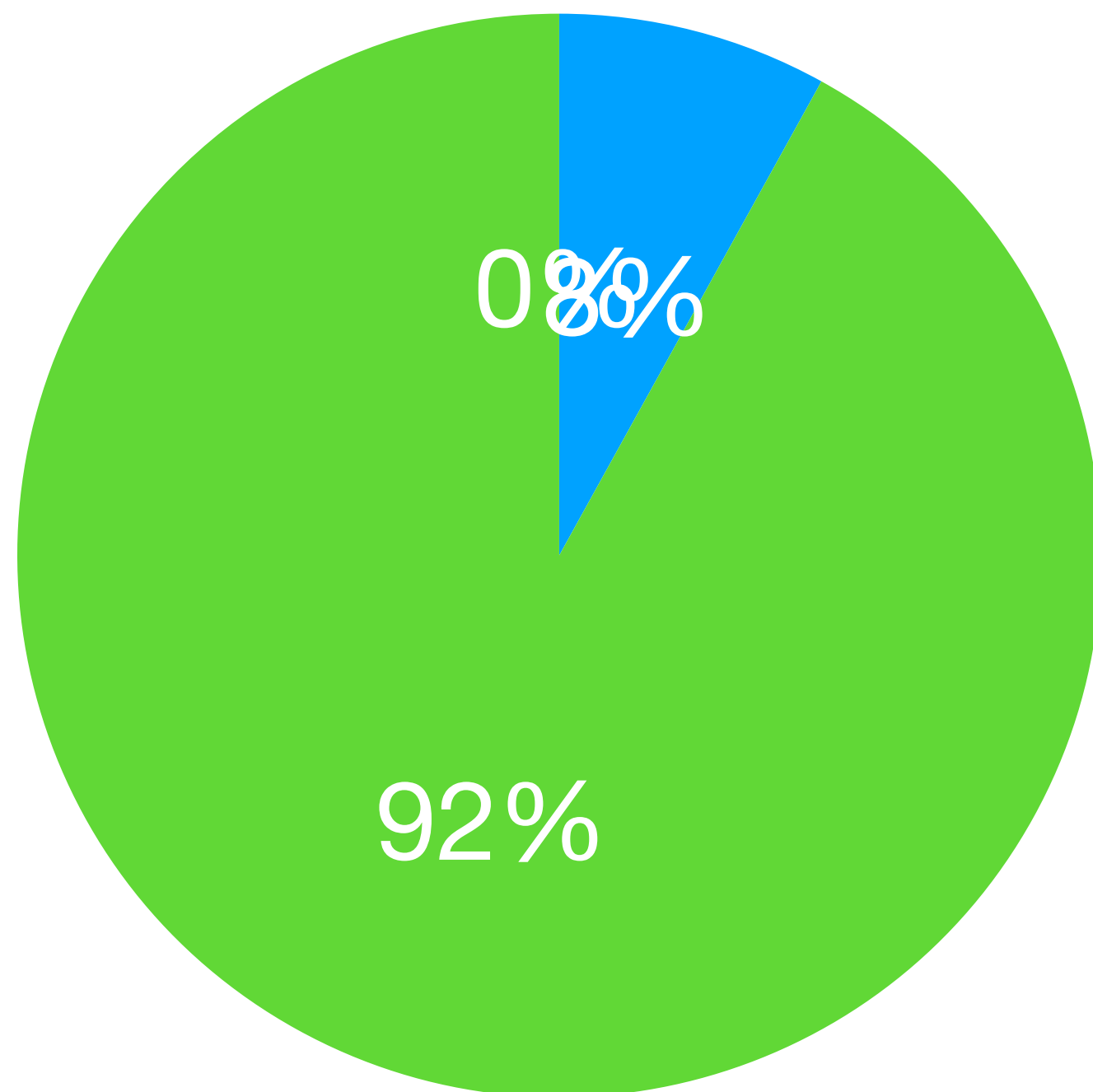
THE IMPACT ON PEERING

**"We are moving from 'Connect First, Fix Later' to 'Secure First, Connect Later.'
Valid ROAs are now the baseline trust metric for new peers."**

ROUTING TABLE STATUS

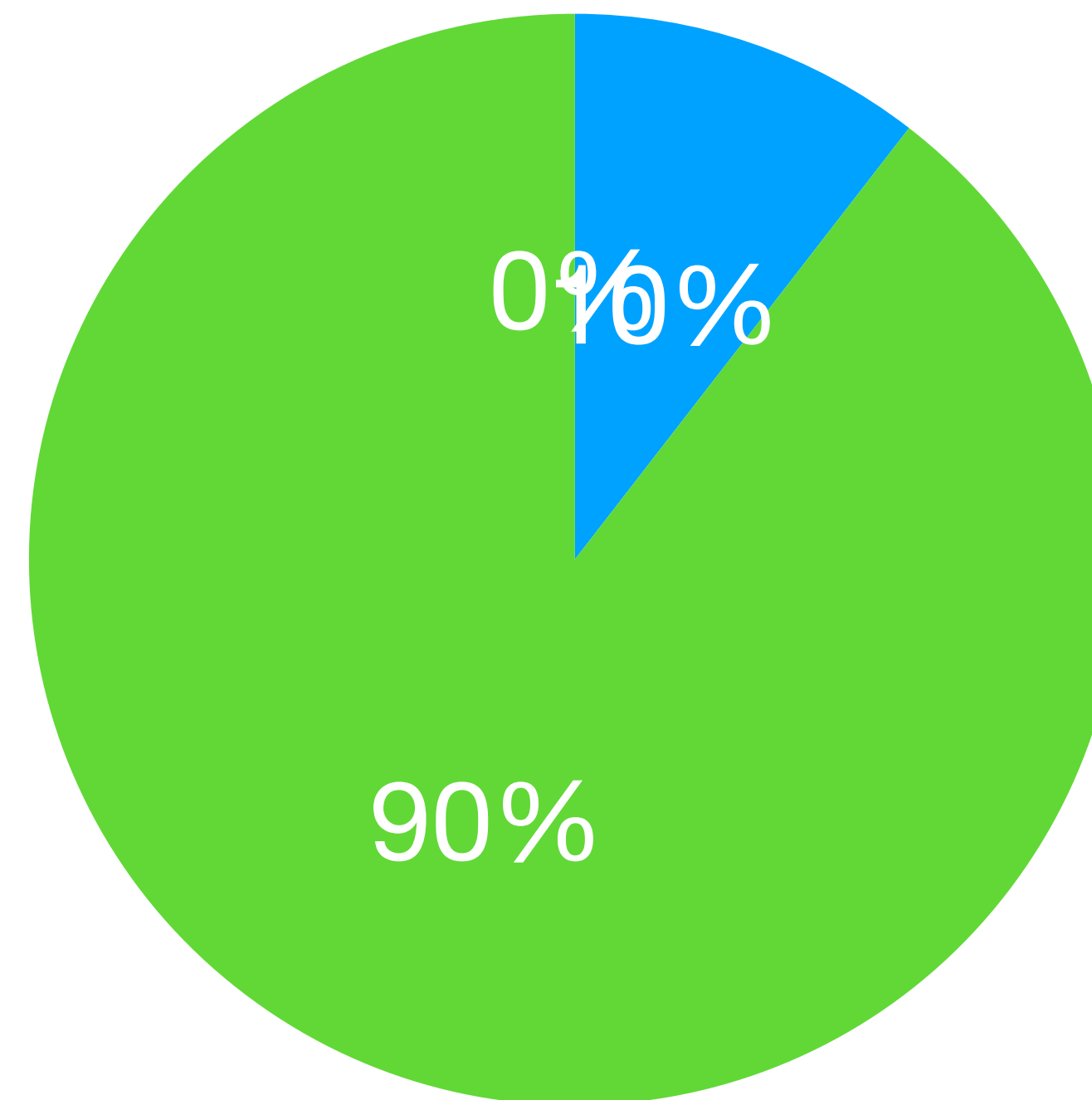
Unknown Valid Invalid

IPv6 RPKI Validation Status



Unknown Valid Invalid

IPv4 RPKI Validation Status



OPERATIONAL IMPACT

Stop Route Leaks Instantly - The firewall for routing logic

Filter Human Error & Missconfig - No more fat-finger propagation

Delivers A Verified, Clean Routing Table - Quality over quantity

Protect Member From Internal Hijak - Building a Trusted Peering Environment