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# Securing The Indonesia Routing Table

An Update From IDNIC and IIX

Syarif Lumintarjo, IDNIC Chairman

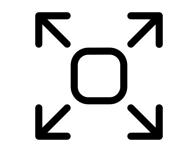
## IDNIC (Internet Registry)



**Role:** National Internet Registry (NIR) Under APNIC



**Function:** Resource Allocation (IPv4, IPv6, ASN)



**Scale:**

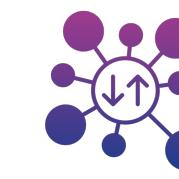
**5100+** Members  
(ISP/Corporate/Gov/Edu)

**52 Million /48 IPv6** Delegated

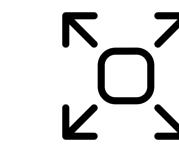
**29.203 /24 IPv4** Delegated



**Role:** Indonesia Internet Exchange (IIX)  
Managed by APJII



**Function:** Resource Allocation (IPv4, IPv6, ASN)



**Scale:**

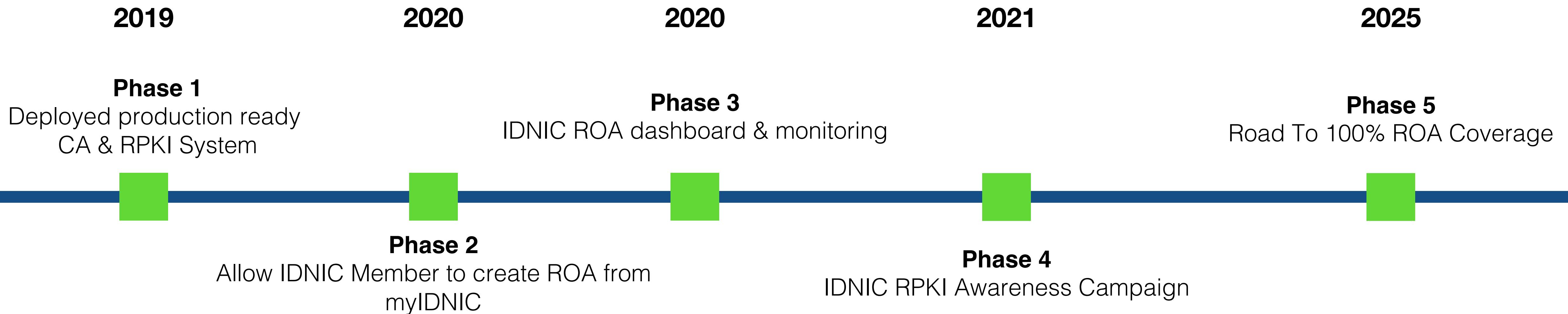
**791** Connected ASN

**19 Tbps** Peak Traffic

One of **Largest IXP In Indonesia**

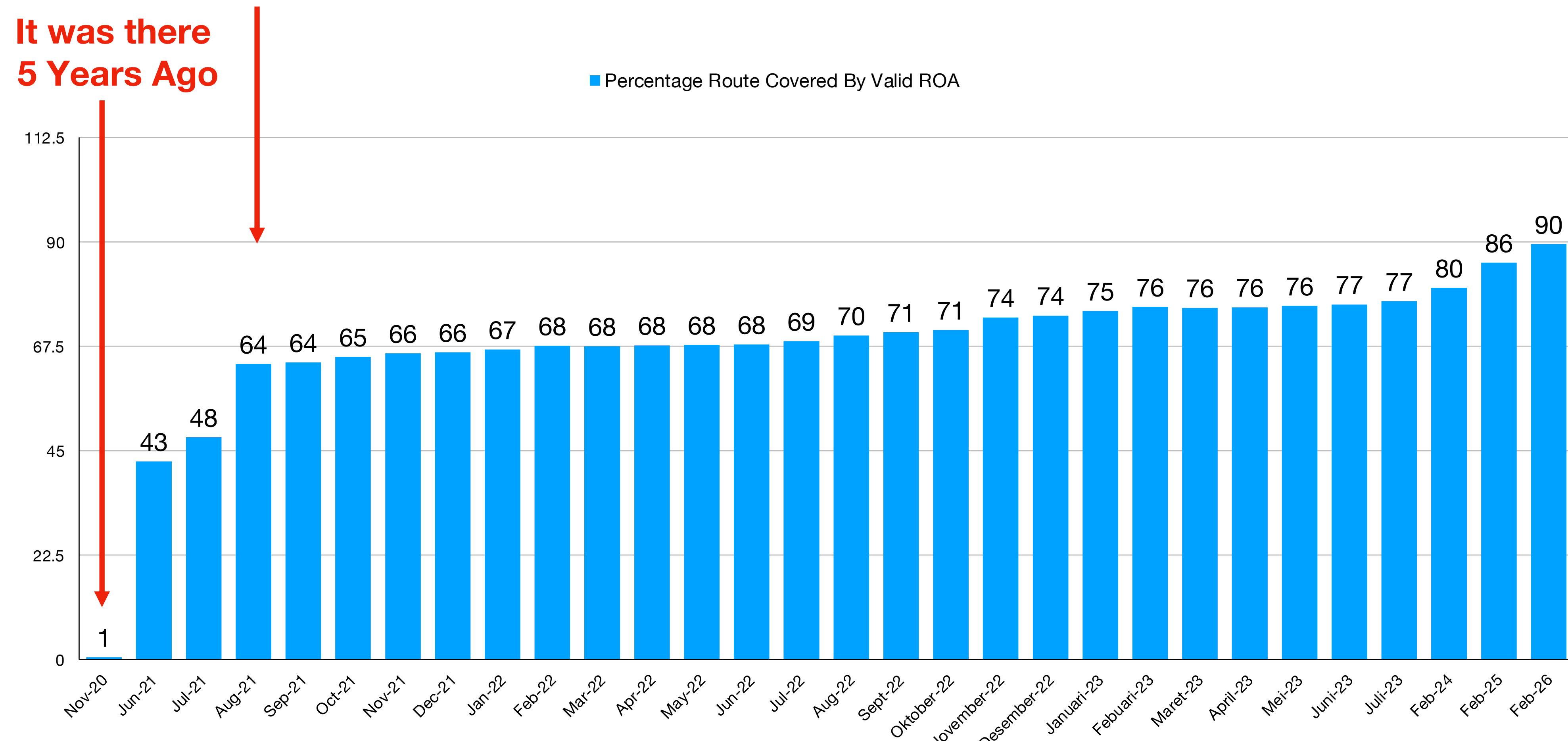
# Our Roadmap Before Dropping RPKI Invalid In Indonesia Internet Exchange (IIIX)

# IDNIC RPKI Roadmap

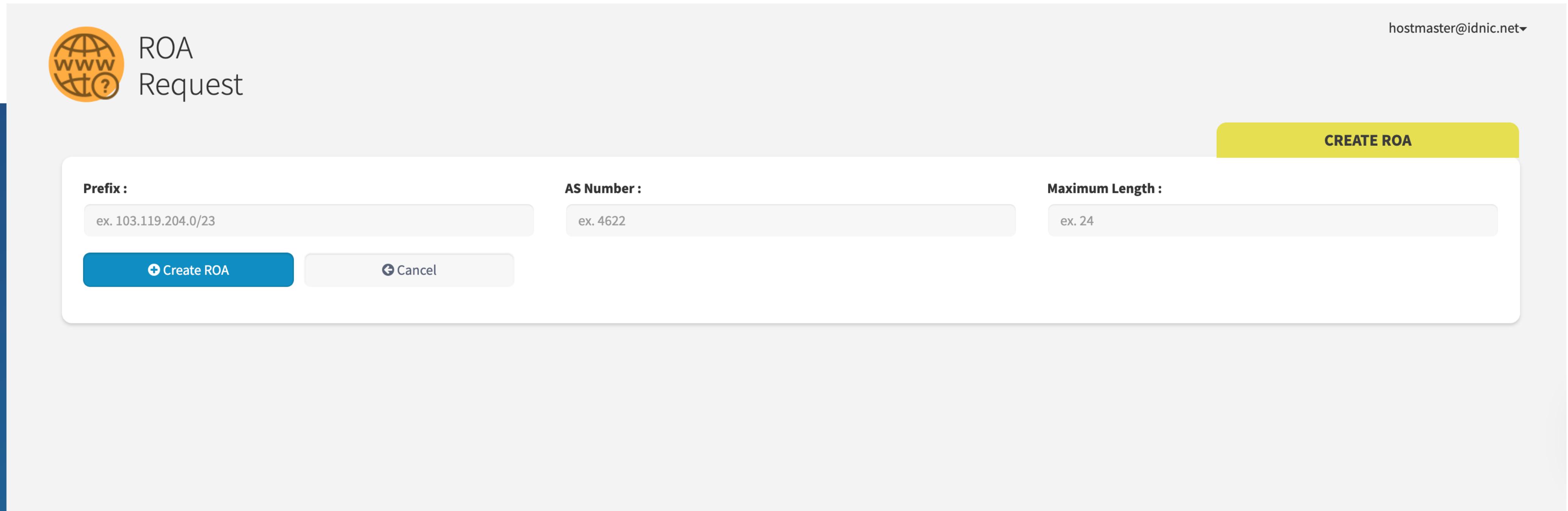


# IDNIC RPKI Roadmap

## IDNIC RPKI Campaign



# IDNIC RPKI Facility



hostmaster@idnic.net

ROA Request

CREATE ROA

Prefix : ex. 103.119.204.0/23

AS Number : ex. 4622

Maximum Length : ex. 24

+ Create ROA Cancel

Home Resources Tools Admin Support

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

# IDNIC RPKI Infrastructure

Median of Rsync

**125 RPS**

Median of RRDP

**431 RPS**

Network Peak Traffic

**515 Mbps**

Total VRPs

**13.680**

Total Publication Point

**2.268**

RRDP [repo-rpki.idnic.net](http://repo-rpki.idnic.net)  
RSYNC [repo-rpki.idnic.net](http://repo-rpki.idnic.net)

**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

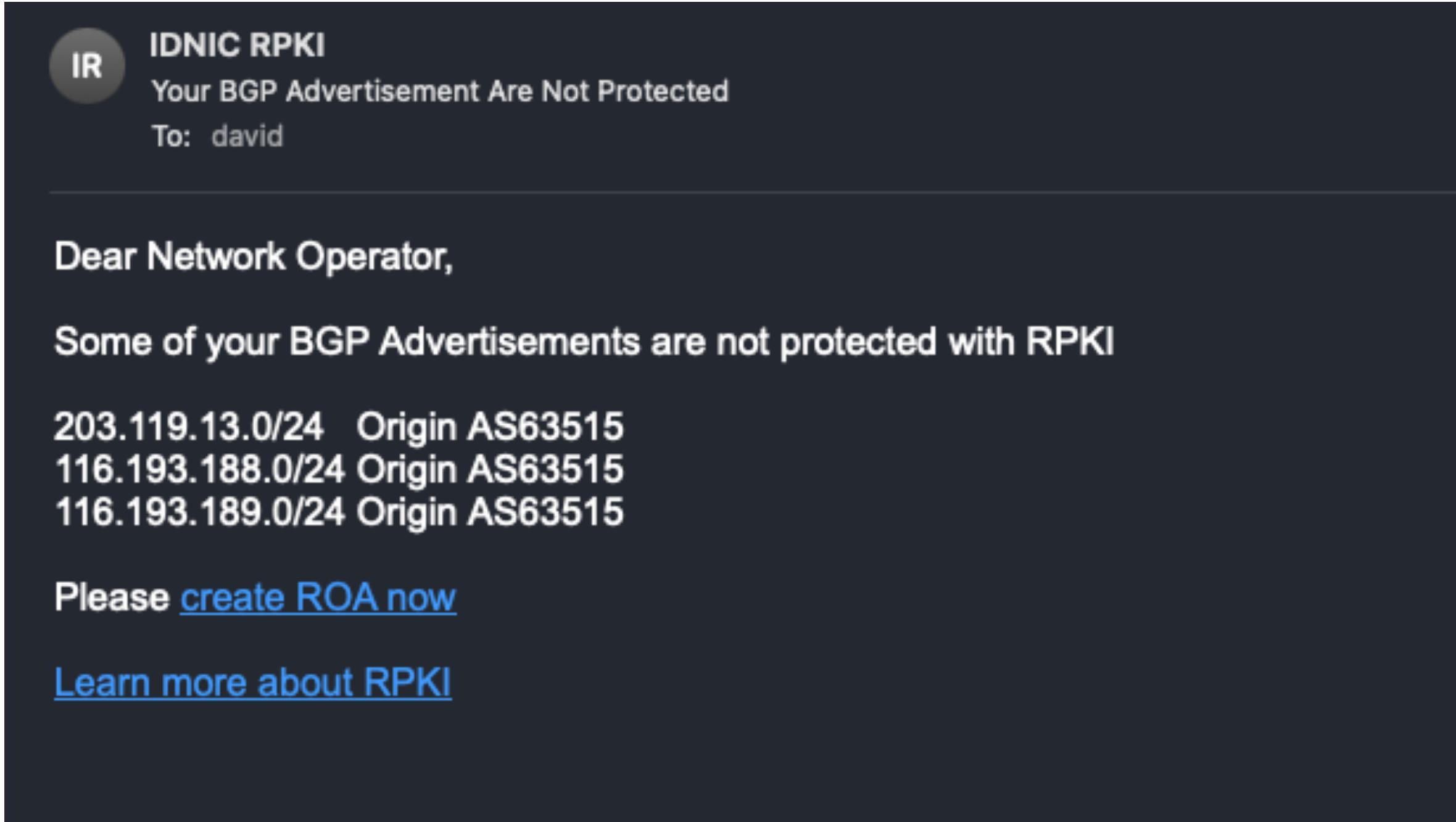
## Direct Approach

70%  
Conversion Rate

3641 ROA Created

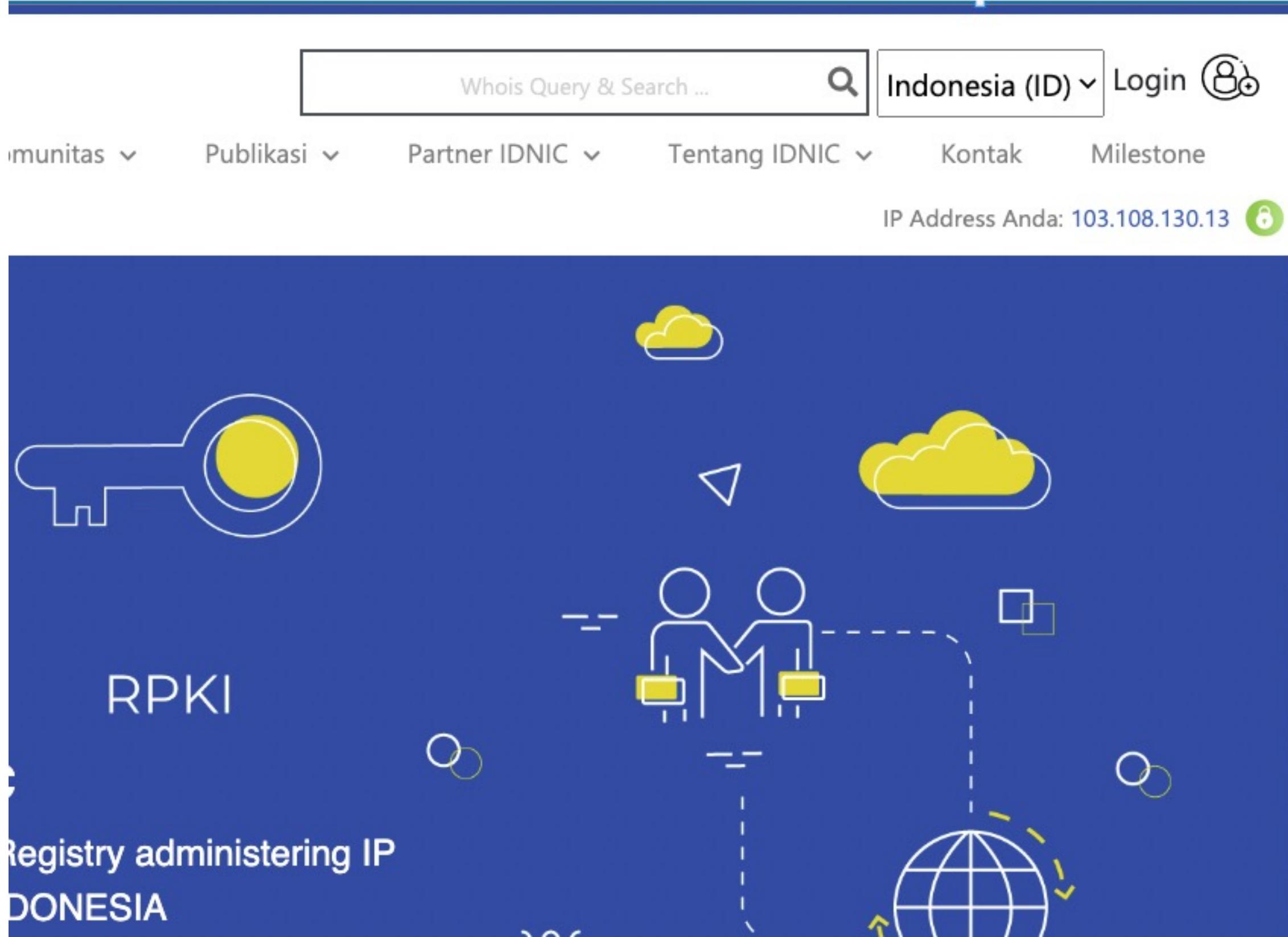


# IDNIC RPKI Awareness Campaign



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

Digital Transformation



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Kelola IP

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

Event

- Daftar Event
- Agenda Event
- Sponsorship

RPKI VALID

Temukan kami di:

f t y i

der

Official Infrastructure Partner

Official Technology Partner

**Jetdind**

**WOWRACK**

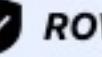
IDNIC website © 2022

Embeddable RPKI Badge

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



# IDNIC RPKI Awareness Campaign

 ROV Check  Drop Invalid Test

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Prefix or IP Address  Origin ASN (optional)  Validate

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

**Invalid**

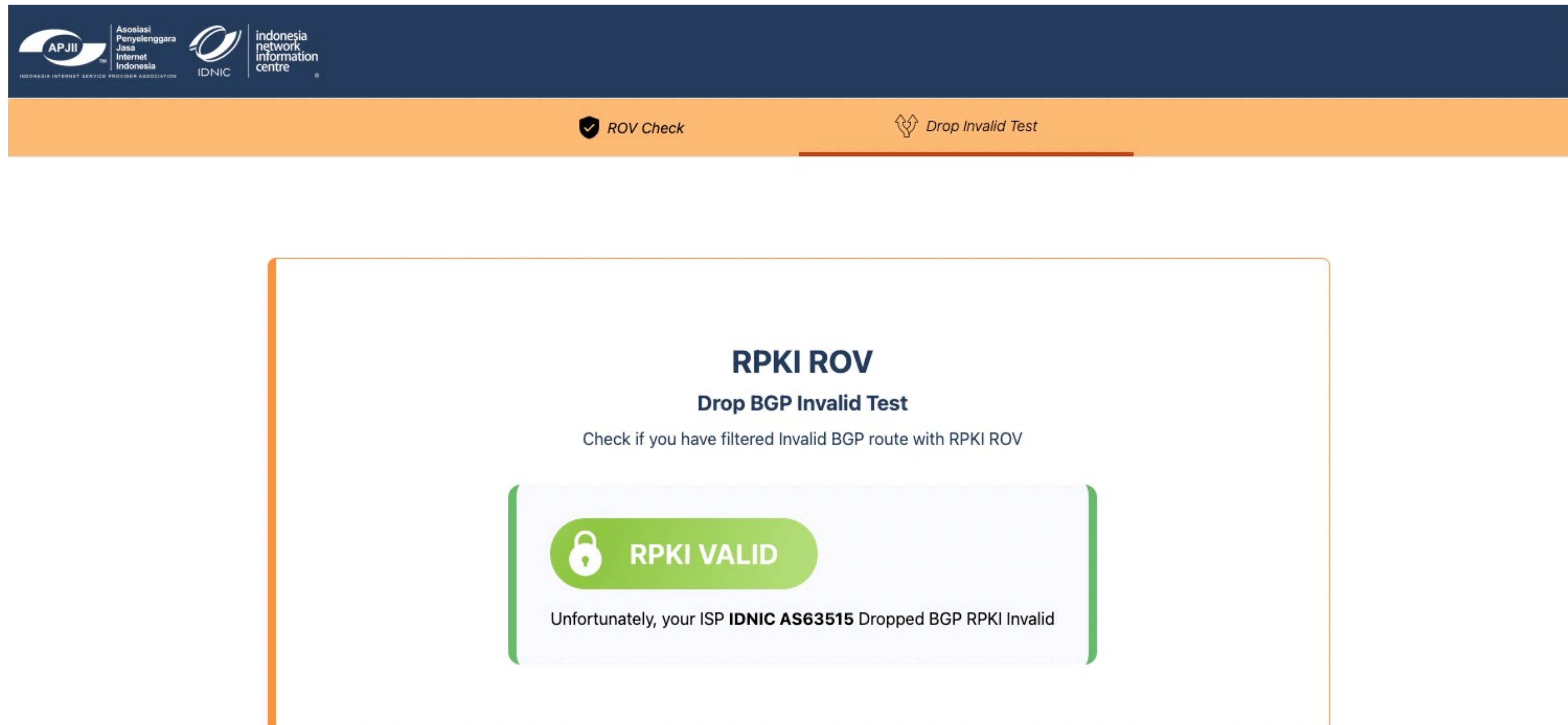
[Fix it now](#) 



Action button to directly fix Invalid / Unknown ROA

# IDNIC RPKI Awareness Campaign

## IDNIC RPKI Drop Invalid Test



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ROV Check 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

# 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

# IIX POLICY ENFORCEMENT: DROPPING INVALIDS

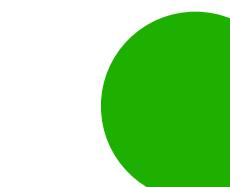
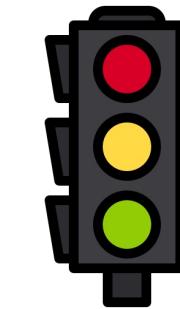
## The Motivation

**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



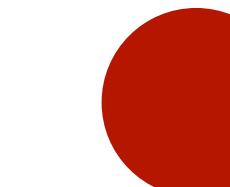
**State : Valid**

**Action :** Accept / Propagate



**State : Unknown**

**Action :** Accept (For Now)



**State : Invalid**

**Action :** Drop

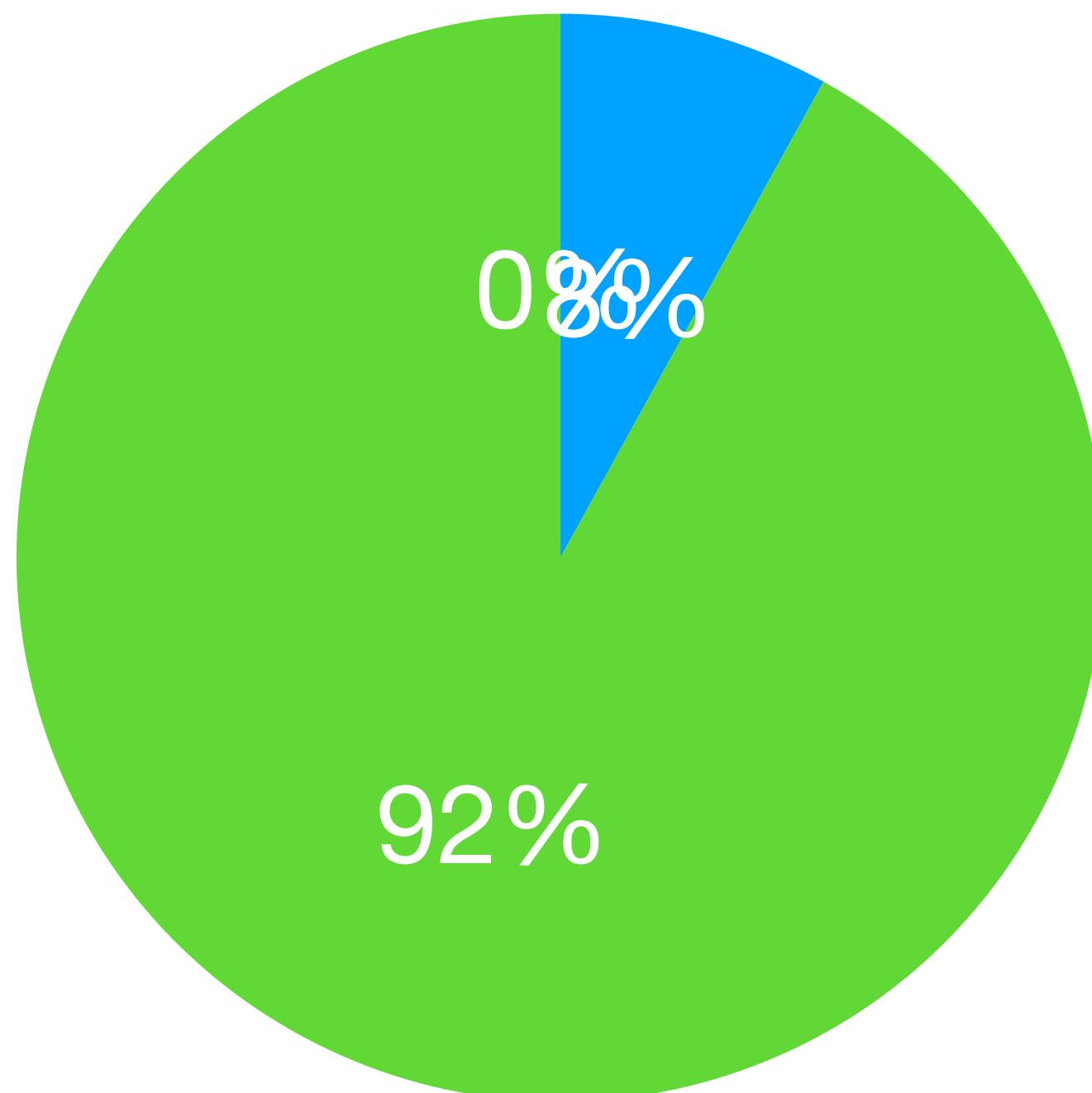
## THE IMPACT ON PEERING

**"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

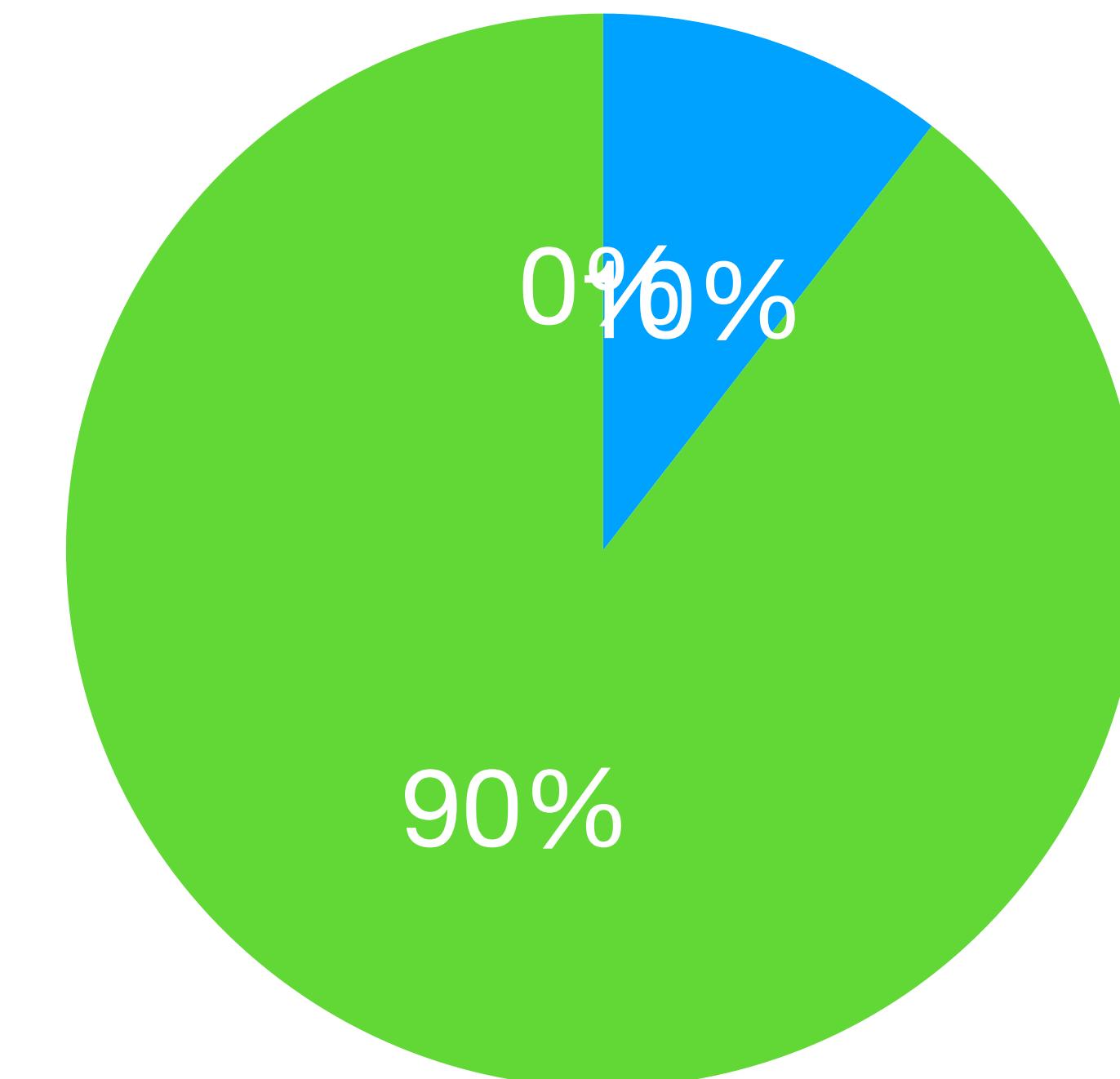
■ Unknown ■ Valid ■ Invalid

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